PROSPECTIVE PAYMENT
ASSESSMENT COMMISSION

MEDICARE AND THE AMERICAN HEALTH CARE SYSTEM

REPORT TO THE CONGRESS

JUNE 1992

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June 1, 1992

The Honorable Dan Quayle
President of the Senate
United States Senate
Washington, DC 20510

Dear Mr. President:

I am hereby transmitting to the Congress the report *Medicare and the American Health Care System*. This report has been prepared by the Prospective Payment Assessment Commission as required by Section 1886(e)(2)(C) of the Social Security Act.

Sincerely,

Stuart H. Altman, Ph.D.
Chairman

Enclosure

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June 1, 1992

The Honorable Thomas Foley
Speaker
United States House of Representatives
Washington, DC 20515

Dear Mr. Speaker:

I am hereby transmitting to the Congress the report *Medicare and the American Health Care System*. This report has been prepared by the Prospective Payment Assessment Commission as required by Section 1886(e)(2)(C) of the Social Security Act.

Sincerely,

Stuart H. Altman, Ph.D.
Chairman

Enclosure

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Executive Summary

Executive Summary

The rapid growth in national health care spending is projected to continue, with total expenditures expected to increase by 9.6 percent in 1992, to more than $809 billion. This extended trend of rising expenditures has been accompanied by dramatic changes in the health care system. Along with a decline in the volume of hospital inpatient services, there has been a significant rise in the number and complexity of cases treated in both ambulatory care settings and other institutional settings. The services provided to patients in each setting have multiplied as well. Underlying these trends have been developments in technology, which have fostered the changes in the pattern of care across settings and fueled the increase in service intensity. The financing of health care has also undergone major changes, with government, business, and individuals striving to contain the growth in costs while attempting to maintain access to high-quality health care.

Between 1980 and 1990, the portion of the nation's total economic output used to provide health services has risen from 9.2 percent to a projected 12.2 percent. With health care consuming a larger share of the nation's resources, it is increasingly important to strike an appropriate balance between the desire for more and better services and the need to limit the growth of health care costs. Moreover, while many Americans receive the best health care that money can buy, millions do not even have access to basic care.

This report presents the results of the Prospective Payment Assessment Commission's (ProPAC's) ongoing study of topics related to the Medicare program and the American health care system in general. The Medicare program's role and its interaction with other facets of the health care system are discussed. The report focuses on how Medicare's prospective payment system (PPS) has affected hospitals and the care that they provide, as well as the increasing volume and importance of services in other delivery settings. Issues that affect Medicare beneficiaries, their access to care, the quality of that care, and their out-of-pocket costs are also examined.

INCREASED SPENDING FOR HEALTH CARE

Health care expenditures in the United States increased at an annual rate of 10.3 percent between 1980 and 1990. This is attributable to four major factors: population growth, general inflation, medical price inflation, and changes in the utilization and intensity of health services. The first two factors are external to the health care sector. Between 1989 and 1990, population growth contributed about 1.0 percent to higher health spending; general inflation accounted for roughly 4.7 percent. Almost half of the recent increase in health care expenditures, however, is attributable to two other factors: rising medical inflation (the increase in health care supply and service prices beyond general inflation) and greater utilization of these supplies and services.

The health care delivery system has demonstrated that it can quickly develop additional capacity to furnish services in response to increasing demand or to the potential for additional revenue. This means that more and better services become available, but it also leads to rapidly rising costs. The lack of coordination in a pluralistic financing and delivery system results in even steeper cost growth due to inefficiencies in the use of service capacity and high administrative expenses. It also creates uncertainty regarding which costs should be controlled and how to control them.

The proliferation of services has been accompanied by growth in both the variety and numbers of providers. Consequently, most Americans with insurance coverage have access to a wide array of ambulatory and inpatient acute care services, which are increasingly technology-intensive. The availability of these services and the insurance mechanisms used to finance them contribute to greater use, thereby driving up overall costs.

Despite the high level of health care spending, unmet needs persist. The proportion of the population that is uninsured grew to 14.7 percent in 1990, or 36 million people. Although workers and dependents are more likely than nonworkers to have

health insurance, 85 percent of the uninsured in 1990 were members of families headed by employed people.

UTILIZATION

Since the implementation of PPS in 1983, fewer people receive inpatient hospital care and more receive care in post-acute and ambulatory settings. Hospital admissions declined to 33 million in 1990, almost 5 million fewer than in 1981. Admissions of people 65 or older increased about 12 percent from 1980 to 1983, but fell by 9 percent over the first three years of PPS. Since 1986, admissions of those over 65 have been increasing, but more slowly than the growth in the Medicare population. These changes in inpatient utilization reflect a combination of trends in medical practice as well as in coverage and payment policies.

In addition to changes in the number of admissions or visits, intensity of care has increased substantially in all settings. Inpatient intensity has grown because of greater use of technology and because many of the less complex cases that were formerly treated in the hospital are no longer admitted. In the outpatient setting, more complex surgeries and procedures are being performed. More laboratory and radiological services, as well as higher complexity procedures, are being provided in physicians' offices. The intensity of care in nursing homes has also risen because patients are being discharged from hospitals to these facilities at earlier stages in the recovery process.

The pattern of services provided in the inpatient setting also changed considerably in the 1980s. For example, in 1989 rural hospitals had fewer beds and lower occupancy than at the beginning of the decade. Many rural hospitals reconfigured their services by establishing or expanding skilled nursing facilities, the number of swing beds, or intermediate care or rehabilitation facilities. Further, the decade saw tremendous growth in the number and use of inpatient care facilities excluded from PPS. The number of psychiatric hospitals and distinct-part units, for instance, grew by 41 percent during the mid-1980s; they also experienced a 54 percent increase in Medicare discharges.

In addition, there was substantial growth in the number and breadth of post-acute care services in the mid-1980s. Home health care expenditures soared 583 percent from 1980 to 1991, representing the fastest growth rate of all Medicare expenditures for the decade. This trend is most likely attributable to changes in coverage requirements. Rehabilitation hospitals and distinct-part units experienced a 63 percent increase in Medicare discharges in the mid-1980s. The Medicare benefit for hospice care began in 1984 with about 100 Medicare-certified providers; by 1990, the total number of providers had increased sevenfold.

There was a radical change in delivery and utilization of ambulatory care in the 1980s—a result of the development and diffusion of new medical technology, the implementation of PPS, and other trends. Total hospital outpatient visits climbed by 40 percent, while outpatient surgeries tripled to 11 million procedures. Medicare expenditures totaled $11.7 billion for hospital outpatient and clinical laboratory services in 1991, an increase of 450 percent over 1980. This growth resulted primarily from increases in the number and complexity of tests and procedures.

Free-standing ambulatory surgical centers (ASCs) were the leading competitors with hospitals for providing surgical procedures. The number of ASCs increased 478 percent in the mid-1980s to almost 1,400. Total ASC procedures grew by more than 500 percent during this period.

Physicians' offices remained the most frequent site of ambulatory care throughout the 1980s. The number of physicians grew 27 percent between 1980 and 1989. They have also become increasingly specialized. The number of non-physician providers, including nurse midwives, physician assistants, clinical psychologists, clinical social workers, certified nurse anesthetists, and nurse practitioners, also rose. These providers tend to practice primarily in ambulatory and community settings.

FINANCING

The pluralistic health care financing system in the United States has encouraged the proliferation of providers and services and the growth in aggregate spending observed in the 1980s. Health care financing methods may differ across providers and across settings, even for the same service. Cost control initiatives are disjointed,

frequently focusing on one sector of the delivery system at a time.

Control of expenditures for services provided in a single setting contributes to growth in utilization and capacity of other settings not under cost containment pressure. For example, PPS has slowed the growth of Medicare payments for inpatient services. Utilization, however, has shifted to post-acute and ambulatory settings, both of which have expanded in scope and volume of services and experienced a corresponding increase in expenditures.

Cost containment strategies by individual payers encourage cost shifting. Hospitals have attempted to generate revenue to cover losses from uncompensated care and below-cost payments for Medicaid and Medicare patients by raising charges to private insurers and finding other sources of revenue. In 1990, hospital charges to private insurers equaled 148 percent of the cost of treating their enrollees. Payments from private payers to hospitals, though somewhat less than charges, were nonetheless 128 percent of costs. Patterns of cost shifting vary substantially by payer and by state.

HOSPITAL FINANCIAL CONDITION

PPS was designed to provide incentives for the efficient provision of hospital services and, as a consequence, the containment of cost growth. Policy decisions have significantly affected the level of payments under PPS, along with the distribution of those payments among hospitals.

Although almost half of all hospitals under prospective payment are located in rural areas, the vast majority of Medicare patients are treated in urban hospitals. Urban hospitals account for 78 percent of all PPS discharges and they receive an even larger share, 85 percent, of all PPS payments. Part of this discrepancy is due to the higher costs urban hospitals bear and the more complex cases they treat. It is also due to payment adjustments for hospitals that have teaching programs or that treat a disproportionate share of low-income patients—hospitals that tend to be located in urban areas. In fact, urban hospitals that do not receive these adjustments get a smaller share of Medicare payments relative to their volume of Medicare discharges.

Since PPS began, the average annual increase in Medicare payments per case has been 5.8 percent. The rate of increase in per-case payments has been much higher for certain groups of hospitals, however, than for others. Recent policy changes have favored rural over urban hospitals—especially sole community hospitals and small rural Medicare-dependent hospitals—and both urban and rural disproportionate share hospitals. These changes have generally been intended to mitigate perceived inequities in payments under PPS as initially designed. However, other factors, such as the uneven increase in the case-mix index and the steep decline in volume among some hospitals, have sometimes offset the intended effects of policy changes.

While policy changes have affected the distribution of payments, the level of these payments has been outpaced by the rapid growth in hospital costs. As a result, the aggregate PPS operating margin, which compares PPS payments with Medicare operating costs, has declined sharply since the early years of PPS. The aggregate PPS margin in the first year was 14.5 percent, but by the seventh year it had fallen to −3.6 percent; ProPAC's estimate for the current year is −10.2 percent.

PPS margins varied greatly both across hospital groups and for individual hospitals within those groups. Urban hospitals had higher margins than rural hospitals, although the gap between them had narrowed considerably by the seventh year of PPS. Recent payment policy changes, however, are likely to reverse this relationship. Further, teaching hospitals had higher margins than non-teaching hospitals with the gap growing wider over time. In almost any group, there were hospitals that had extremely high or low PPS margins. Moreover, the gap between those that were doing well under PPS and those that were not has widened in every year since PPS went into effect.

Despite their declining PPS margins, the overall financial status of hospitals seems to be fairly stable. Total hospital margins, which compare total revenues and expenses (including both patient care and non-patient care activities) for the facility as a whole, were lower in 1990 than in the early years of PPS, despite having risen somewhat in the late 1980s. Nevertheless, total margins were higher in 1990 than at any time before 1982, the year before PPS was enacted.

As with PPS margins, total margins vary greatly both across hospital groups and for individual hospitals within any group. The level and distribution of total margins, however, differed markedly from PPS margins. Rural hospitals, which had a lower aggregate PPS margin in the seventh year of PPS, had a higher total margin. Hospitals with the highest level of teaching intensity, which had by far the highest PPS margin, had an aggregate total margin among the lowest for any hospital group. Similarly, disproportionate share hospitals in large urban areas had a high PPS margin and low total margin.

These differences between PPS and total margins indicate that the extent of cost shifting varies by hospital. The evidence is that the need and ability to cost shift varies widely between hospitals. Hospitals that experience large losses on their uncompensated care and Medicaid and Medicare patients may attempt to cover those losses by raising charges to private payers. However, some hospitals may have too small a share of private pay patients to shift costs successfully. Cost shifting thus may result in an inequitable distribution of overall hospital payments, as well as a disproportionately large burden on some payers. Most importantly, it may affect the services that hospitals in some areas can provide, threatening access to care for certain populations.

FACTORS ASSOCIATED WITH HOSPITAL PERFORMANCE UNDER PPS

The assumption underlying PPS was that hospitals can respond to payment incentives to become more efficient. To examine the validity of this assumption, ProPAC conducted an analysis of factors associated with successful or poor hospital financial performance under PPS. Hospital performance is a function of interrelated factors such as the external environment in which the hospital operates; the design features of the payment system; and the hospital's internal characteristics, including the responses of the hospital's management to its environment and the payment system.

Several external environmental factors were found to be associated with success under PPS. For instance, the condition of the local economy in the hospital's area can make it more or less difficult to attract physicians and maintain admissions volume. The availability of complementary health care providers, such as physicians, nurses, and nursing homes, can make it easier to attract patients and to provide a continuum of care more efficiently. In addition, the regulatory environment affects the hospital's performance; hospitals in states that regulate all payers other than Medicare were more likely to have had consistently high PPS margins. However, none of these external factors by itself appeared to determine financial performance. Management's response to the challenges presented by the external environment also played a major role in distinguishing hospitals that performed well from those that performed poorly.

The design features of the payment system also affect hospital financial performance. Teaching and disproportionate share hospitals that receive large payment adjustments are much more likely to perform well. Several groups of hospitals have been accorded special payment status, usually implemented without additional Medicare funds. This means that other groups of hospitals are placed at a relative disadvantage. Despite this, however, the major determinant of success was the ability to reduce costs below the level of payments. For example, improved productivity was strongly associated with consistently high PPS margins. Another important factor was the ability to keep wages low relative to the PPS area wage index, which suggests either that hospitals holding the line against wage increases will perform well, or that the wage index used for payment may be flawed.

The evidence also confirms the role strong management plays in influencing hospital financial status. Factors within the control of hospitals were consistently related to performance under PPS. Hospitals that performed well attempted to maintain or increase volume, sustain high occupancy rates, reduce length of stay, develop complementary services, increase staff productivity, plan and monitor resource use, keep capital costs low, and use information systems effectively. To boost revenues, hospitals used strategies to attract physicians and patients, improve medical record coding, and shift costs to units of the hospital that are not included under PPS.

Hospitals with strong performance records tended to have had effective management structures in

place prior to PPS. They had a longstanding culture to control costs. These hospitals maintained productive relationships between the administration and physicians. Further, physicians were involved in a range of decision making activities. Factors associated with successful performance tend to take a long time to implement and often require resources to initiate. These findings, however, do not indicate whether hospitals that are performing poorly under PPS can change their behavior to enhance performance. This issue is a topic for further study.

MEDICARE BENEFICIARIES

The most important criterion for evaluating the impact of PPS or any other element of the health care system is how it affects the delivery of health care to Medicare beneficiaries and to the population as a whole. In 1991, there were roughly 35 million enrollees in the Medicare program. About 10 percent of these enrollees were disabled and the rest elderly. In 1990, about 163,000 enrollees had end-stage renal disease, 31 percent of whom were over 65.

The proportion of enrollees for whom Medicare paid for services during the year grew from 63 percent to 78 percent between 1980 and 1989. Medicare inpatient hospital utilization declined from 23.7 percent of enrollees in 1980 to 19.2 percent in 1989. Utilization of ambulatory services, however, has increased substantially. For example, in 1989, 45.8 percent of enrollees used hospital outpatient services, compared with 27.5 percent in 1980. In addition, almost 80 percent of enrollees used physician services—the most widespread benefit.

Preliminary estimates indicate that total Part A and Part B Medicare payments in 1991 were about $120 billion, an increase of 10.4 percent from 1990 and 85 percent since 1984. Mirroring trends in utilization, Part B payments are growing at a faster rate than Part A payments. Between 1990 and 1991 Medicare payments increased 17 percent for hospital outpatient services and 12 percent for physicians. This compares with 7 percent for inpatient hospital services. However, inpatient hospital payments continue to be the largest share of Medicare spending.

Beneficiaries were responsible for 8.4 percent of total payments for hospital inpatient services in 1991, which roughly equaled their liability in 1990. For non-inpatient services, however, beneficiary liability has been declining. In 1991, the average beneficiary share of non-inpatient payments was 33.8 percent, a 1.7 percentage point decrease from 1990. Total out-of-pocket beneficiary health expenditures for both Medicare-covered and non-covered services per elderly family equaled $3,305 in 1991. This represents a more than doubling of real out-of-pocket spending since the establishment in 1965 of the Medicare program and a real increase of 22.5 percent since the implementation of PPS. The two largest shares of out-of-pocket expenditures were for nursing home care and several services not covered by Medicare, including pharmaceuticals, dental services, and eye care services.

Almost all the elderly (95.3 percent) receive health insurance coverage through the Medicare program; however, not all health care needs of the elderly are covered. Because out-of-pocket expenses may be quite large, many beneficiaries (79 percent) have supplemental insurance protection. In 1991, about 30 percent of beneficiaries had private supplementary health insurance through employment-based group retiree plans. Another 31 percent had supplemental insurance through individual medigap insurance. Medicaid provided supplemental coverage for another 18 percent.

These supplemental plans provide important protection to Medicare beneficiaries. There are indications, however, that the availability of employer-sponsored benefits may be threatened. Rising health care costs and changes in accounting requirements to prefund these liabilities may affect the financial viability of the companies that provide these benefits. Further, Medicare secondary payer provisions shift to employers the costs of older workers and retirees.

Growing financial pressures on beneficiaries, insurers, and providers have led to particular concerns about quality and accessibility of care for Medicare beneficiaries. The application of Medicare's two major quality assurance mechanisms, Conditions of Participation (COPs) and Peer Review Organizations (PROs) varies widely across types of facilities. The inpatient hospital setting has the most comprehensive review systems in place. For some providers, COPs are very stringent and there is substantial PRO review; for others, particularly new

types of ambulatory care facilities, there are neither COPs nor requirements for PRO review. This raises concerns about the adequacy of quality assurance mechanisms as more services are provided out of the hospital setting. Further, few of these mechanisms evaluate outcomes of care—the ultimate measure of whether quality services have been delivered. Rather, they focus on the structure of the facility and the process of providing care.

CONCLUSIONS

As health care expenditures continue to rise, there is growing concern about the future of the U.S. health care system. While more and better services are available to many people, increased costs threaten access to those services for millions who do not have the resources to pay for them. Cost containment is not without its risks; cutting costs can mean reducing the volume of services available, which may reduce access and quality as well.

The focus of the current health policy debate on these two issues—increased access and cost containment—illustrates the difficulty faced by society. Increased access usually means greater utilization, but utilization is a primary reason for the continued growth in health care costs. Cost containment usually results in decreased utilization, but utilization is a primary measure of access for specific groups or the population as a whole. Difficult trade-offs must be made that balance the goals of promoting access to health services for all Americans, constraining growth in costs, maintaining quality of care, and providing appropriate and equitable payment for health care providers.

Past attempts to achieve one or more of these goals have frequently focused on individual services, populations, and payers. Such a disjointed approach cannot be successful in controlling overall costs or ensuring that an appropriate continuum of care is provided. Broader approaches are now being considered. The issues addressed in this report are intended to reflect the growing realization that hospitals and other providers; Medicare and other payers; and costs, access, and quality must be addressed together for health care policy changes to be effective.

Chapter 1

Issues in Health Care Spending

Chapter 1

Issues in Health Care Spending

Spending for health care in the United States continued to rise rapidly throughout the 1980s and into the 1990s, despite efforts to contain costs. The U.S. spends more per person on health care than any other country, and the value of this spending is being questioned by everyone involved in the health care system: consumers, providers, insurers, and policy makers at both the state and Federal levels. In addition, large groups of Americans are uninsured for basic health services, do not receive needed medical care, or are vulnerable to impoverishment from the costs of catastrophic illness or long-term care. These fundamental features of the American health care system—rising costs and unequal access to health care services—define the challenge for system reform.

Expenditures attributable to the Medicare program constitute more than one-third of all health care spending. As a major payer for health services, Medicare policies have a strong impact on the health care system. In this report, the Prospective Payment Assessment Commission (ProPAC) examines the Medicare program and the overall health care system. The report provides a context for evaluating the impact of Medicare's policies on hospitals and other health care providers, other public and private payers, and individuals.

This chapter begins by describing national trends in health care spending. Next, the trend and distribution of spending are reviewed for providers and payers. This is followed by a discussion of the recent increase in the number of uninsured individuals and the implications of this change. The final section analyzes some of the key factors inhibiting cost containment in the hospital sector of the health care system.

The second chapter contains information on the financial condition of hospitals, including revenues, expenses, and margins. Chapter 3 presents the findings of ProPAC analyses of hospitals that are financial winners and losers under Medicare's prospective payment system (PPS). Chapter 4 describes the availability of health care services and the changing patterns of service use. Characteristics of Medicare beneficiaries, their health insurance coverage, and access to and quality of care are discussed in Chapter 5.

NATIONAL TRENDS IN HEALTH CARE EXPENDITURES

National expenditures for health care have spiraled from $250 billion in 1980 to $666 billion in 1990, an increase of 266 percent (see Table 1-1).[1] These expenditures have been projected to climb to $809 billion by 1992. The annual rate of increase fell from 16.1 percent in 1981 to 7.6 percent in 1987, but has hovered just over 10 percent from 1988 through 1992.

Health care expenditures increased an average of 10.3 percent a year throughout the 1980s compared with 12.6 percent in the 1970s. Much of the apparent decline in spending between the decades was due to lower general inflation in the 1980s. Real health care expenditures grew an average of 6.2 percent annually from 1970 to 1979 and 5.4 percent a year from 1980 to 1990. Cost containment efforts during the decade of the 1980s thus appear to have had only limited success in slowing overall spending growth.

The gross national product (GNP) measures the total value of goods and services the nation produces. Health care spending is often compared with GNP to measure how much of total national resources are used to support health care services. Between 1980 and 1990, health expenditures rose from 9.2 percent of GNP to 12.2 percent. The increase in health care spending exceeded GNP growth in every year between 1980 and 1990 except 1984.[2]

Table 1-1. National Health Expenditures, 1980-1990

Year	National Health Expenditures (In Billions)	Percent Change	Real National Health Expenditures (In Billions)*	Percent Change	Percent of Gross National Product
1980	$250.1	--	$250.1	--	9.2%
1981	290.2	16.0%	265.5	6.2%	9.5
1982	326.1	12.4	280.9	5.8	10.3
1983	358.6	10.0	296.6	5.6	10.5
1984	389.6	8.7	309.7	4.4	10.3
1985	422.6	8.5	325.1	5.0	10.5
1986	454.8	7.6	340.9	4.9	10.7
1987	494.1	8.6	357.8	5.0	10.9
1988	546.0	10.5	379.4	6.0	11.2
1989	602.8	10.4	400.8	5.6	11.6
1990	666.2	10.5	424.1	5.8	12.2

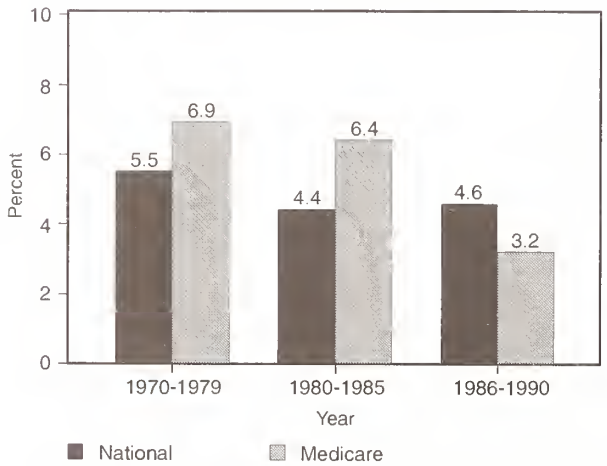
* Adjusted by the fixed-weight price index for GNP. Real expenditures are expressed in 1980 dollars.

SOURCE: Health Care Financing Administration, Office of the Actuary.

The expanding share of GNP attributable to health care differs from the trends for other services. For example, the share of GNP consumed by education expenditures has remained relatively stable, varying only from 7.2 percent in 1970 to 6.5 percent in 1980, and then to 6.6 percent in 1990.[3]

National per capita health care spending increased at a faster rate than Medicare per enrollee spending after the mid-1980s (see Figure 1-1). This may indicate that the Federal government has been able to control its health care expenditures better than the private sector. But government health expenditures are still rising faster than inflation in the general economy.

Figure 1-1. Change in Real National and Medicare Total Health Care Expenditures, 1970–1990 (Per Capita and Per Enrollee)



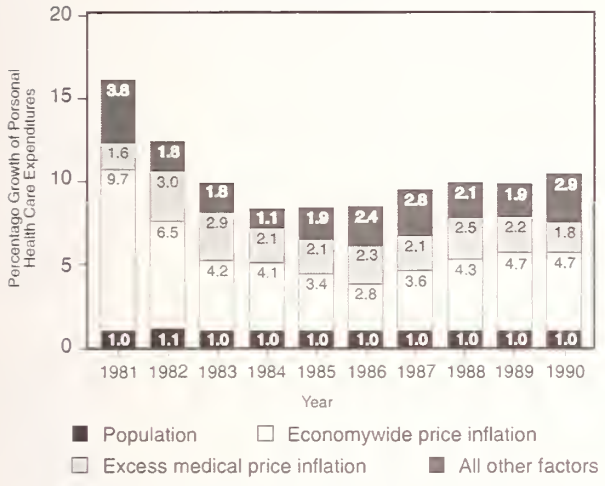
SOURCE: ProPAC updated graph based on information from the Health Care Financing Administration, Office of the Actuary.

Personal health care expenditures (which exclude spending on program administration as well as the net cost of private health insurance, research, construction, and government activities) increased at a rapid rate, climbing from $219 billion in 1980 to $585 billion in 1990. During this period, the average annual change was 10.3 percent.

More than half of the growth in personal health care expenditures was due to forces outside of the health care system. Population growth increased health care spending by about one percentage point a year, and economywide price inflation was also a major component of the increase (see Figure 1-2).

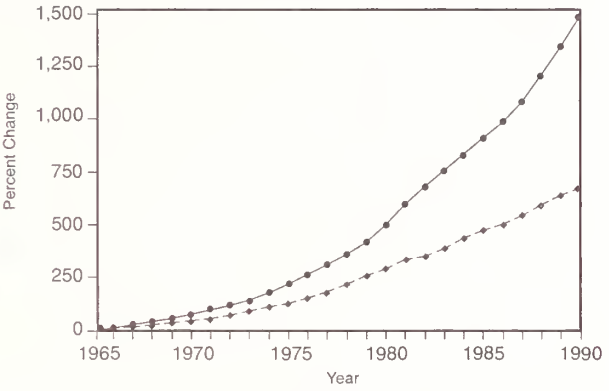
Factors specific to the health care system—medical price inflation and increased use and intensity of health services—accounted for the rest of the growth in spending.[4] Utilization refers to the number of services received per person, while intensity reflects the quantity and complexity of resources used in producing each service. Intensity captures changes in medical practice patterns and technology as well as new policies that affect provider resource requirements. Nevertheless, increases in expenditures can be offset by productivity improvements in the health care sector.[5]

Figure 1-2. Reasons for Growth in Personal Health Care Expenditures, 1981–1990



SOURCE: Health Care Financing Administration, Office of the Actuary.

Figure 1-3. Cumulative Change in National Health Expenditures and Gross National Product, 1965–1990 (In Percent)



SOURCE: Health Care Financing Administration, Office of the Actuary.

Trends in inflation and population are easier to predict than those in the utilization and intensity of health services. Moreover, utilization and intensity will be affected by future modifications in the financing of health care. On the basis of current trends, the Department of Commerce projects that health care spending will increase at an average annual rate of 12 percent to 13 percent during the next five years. If this happens, these expenditures will reach $1.3 trillion by 1997.[6]

The Health Care Financing Administration (HCFA) projects a lower annual rate of increase for health care expenditures of 9.5 percent, on average, throughout the 1990s. This means that expenditures for health care will be $1 trillion in 1995 and $1.6 trillion in 2000.[7] According to HCFA, the annual real per capita increase will be 2.5 percent by the year 2000 (see Figure 1-3). The growth in spending is projected to exceed the growth in GNP through the end of the decade, resulting in a 16 percent share of GNP in 2000. Even if health care expenditures grew only in response to population and economywide inflation after 2000, they would exceed 20 percent of GNP by 2030.

HOSPITALS AND OTHER PROVIDERS

From 1980 to 1990, there were significant changes in the utilization, supply, and distribution of expenditures among provider groups. This section presents information on trends in spending for hospital and other health care services. The major factors underlying these trends are reviewed and the proportion of spending increases attributable to each is estimated.

Trends in Spending

Hospital services have always made up the largest part of personal health care spending. In 1990, these services accounted for nearly 44 percent of expenditures (see Table 1-2). However, the share of expenditures attributable to hospitals decreased more than three percentage points from 1980 to 1990, and the drop would have been even sharper were it not for the increase in spending for hospital outpatient services. In 1980, outpatient services accounted for 13 percent of community hospital revenue. By 1990, this share had grown to 24 percent.[8]

Total personal expenditures for hospital services increased from $102 billion in 1980 to $256 billion in 1990. The annual rate of growth was in double-digits until 1983, fell to below 7 percent in the mid-1980s, and then began to climb again, reaching 10 percent in 1990.

The share of personal expenditures for physician services was 22.5 percent in 1990, an increase of a

Table 1-2. Personal Health Care Expenditures, by Provider, 1980-1990 (In Percent)

Provider	1980	1985	1990
Hospital services	46.9%	45.7%	43.7%
Inpatient revenue	31.7	30.8	28.0
Outpatient revenue	4.8	6.3	8.7
Other patient revenue	10.5	8.7	7.0
Physician services	19.2	20.1	22.5
Other professional services	10.6	10.8	10.9
Home health	0.6	1.0	1.1
Nursing home care	9.2	9.3	9.1
Drugs and other medical non-durables	9.2	8.8	8.2
Other personal health care	4.4	4.2	4.4
Total	100.0	100.0	100.0

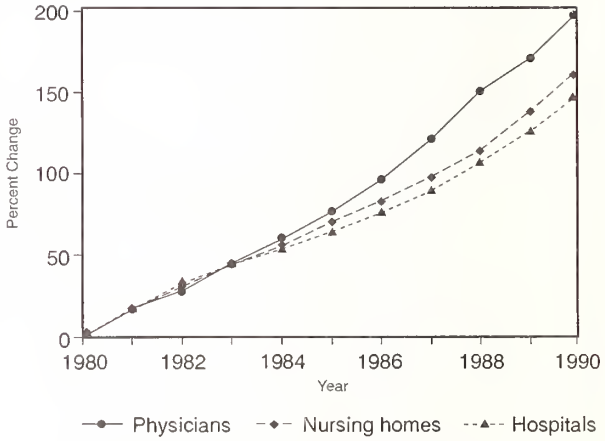
SOURCE: Health Care Financing Administration, Office of Actuary.

little over three percentage points since 1980. During the 1970s the share of spending attributable to physician services dropped as the growth in expenditures for hospital services outpaced that for physician services. Starting in the early 1980s, the pattern reversed, with faster growth in spending for physicians compared with hospitals. The net result is that the shares of services attributable to hospital and physician services in 1990 were similar to those in 1970.

National spending for physician services rose from $41.9 billion in 1980 to $125.6 billion in 1990, an increase of 300 percent. In 1980 and 1981, the growth in spending was at the highest rate since 1965. The annual increase then varied between 8 percent and 13 percent for the rest of the decade, ending up at 10.7 percent in 1990. In 1990, the growth rate for physician services was roughly the same as that for hospital services. Over the entire decade, however, the change was much higher for physician services than for either hospital services or nursing home care (see Figure 1-4).

The share of expenditures attributable to nursing home care rose throughout the 1960s and 1970s, and accounted for about 9 percent of all personal health care spending in 1980. The share remained stable during the 1980s. Spending for nursing home care was $1 billion in 1960, $20 billion in 1980, and $53 billion in 1990. The average annual increase was about 16 percent during the 1960s and 1970s, dropping to 10 percent during the 1980s.

Figure 1-4. Cumulative Change in Health Expenditures, by Selected Providers, 1980–1990 (In Percent)



SOURCE: Health Care Financing Administration, Office of the Actuary.

Reasons for Growth

The factors that drive up spending by provider are similar to those that contribute to the growth in overall expenditures: population growth, economy-wide inflation, medical price inflation, utilization, and intensity. Rising expenditures attributable to population growth and general economic trends are less amenable to control by the health care system. Spending increases due to medical price inflation, utilization, and intensity may reflect desirable changes in the delivery of health care services insofar as they indicate improved health status or greater access to care. Alternatively, higher expenditures associated with these factors may not improve health status or access.

Medical price inflation can result from greater beneficiary demand for medical services, which can be sparked by increases in personal income or decreased patient liability for the cost of these services. But it could also be the result of poorer productivity, higher wages in the health care sector compared with the rest of the economy, or the pricing strategies of health care providers.

Increases in utilization may be due to wider access to services in a broader range of settings

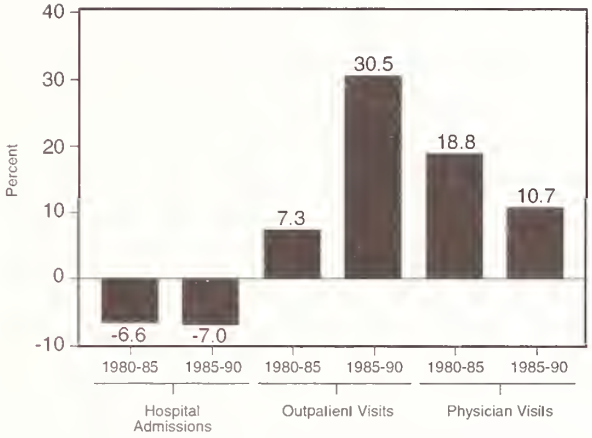
that improves the overall health status of the population. Conversely, higher utilization rates may also reflect the addition of services of questionable value. Finally, greater intensity in the provision of services may represent improvements in the quality of medical care and technological advancements. As with utilization, however, increases in intensity do not necessarily lead to better health outcomes. Furthermore, providers should be able to fund at least part of the costs of expanded intensity through productivity improvements.

Between 1985 and 1990, factors beyond hospitals' control—economywide inflation and population growth—were responsible for 57 percent of the growth in inpatient hospital services (see Table 1-3). Inflation and population increases were responsible for more of the growth in inpatient hospital expenditures than the increase in outpatient hospital, physician, or nursing home spending during this period. The proportionately larger contribution of these factors was the result of different trends in utilization for inpatient hospital services compared with other services.

Utilization—The trend in the use of services by providers varied markedly during this period. The utilization of inpatient services declined. The utilization of outpatient services soared, while the use of physician and nursing home services increased but at a slower rate. For example, hospital admissions dropped 7 percent from 1985 to 1990, hospital outpatient visits grew about 30 percent, and physician visits increased 10.7 percent (see Figure 1-5).

The difference in utilization across providers is partially the result of the expanded use of new technologies. The number of ambulatory (hospital outpatient and free-standing) surgical procedures

Figure 1-5. Change in Hospital Admissions, Outpatient Visits, and Physician Visits, 1980–1990 (In Percent)



SOURCE: American Hospital Association, *Hospital Statistics* 1986, 1991 and 1992; U.S. Statistical Abstract 1991; and National Center for Health Statistics.

rose 261 percent between 1979 and 1989. By contrast, the total volume of inpatient surgical procedures declined 30 percent.[9] The growth in ambulatory surgery represents a shift in care from the inpatient to the outpatient setting for some services, such as hernia repair, as well as the addition of many new services.

Much of the growth in physician services is related to the expanded use of technologies such as magnetic resonance imaging (MRI) and other new ancillary services. Spending for physician services was also driven by the increase in ambulatory surgical services, such as cataract extractions, hernia repairs, and endoscopies. Physician services related to evaluation and management, such as office visits and inpatient surgery (except for coronary artery bypass procedures), played a smaller part in spending growth compared with the other services and procedures.[10] (This is discussed in more detail in Chapter 4.)

Table 1-3. Factors Accounting for Growth in Health Care Spending, 1985-1990 (In Percent)

Services	Population	Economywide Price Inflation	Medical Price Inflation	Utilization	Intensity	Total
Inpatient	12.7%	44.6%	24.5%	-23.2%	41.4%	100%
Outpatient	6.0	21.2	11.6	30.6	30.6	100
Physician	8.3	29.2	21.4	3.7	37.5	100
Nursing home	10.9	38.4	15.4	2.6	32.6	100

SOURCE: Health Care Financing Administration, Office of the Actuary.

Improvements in medical technology have affected not only ambulatory services, but also services offered in the inpatient setting. More hospitals are now performing complicated procedures such as open-heart and transplant surgeries. Further, the intensity of inpatient treatment is rising as hospitals increasingly offer high-tech radiological and other ancillary services.

Intensity—From 1985 to 1990, intensity of service changes were substantial in all settings, accounting for 41 percent of the growth in spending for inpatient services, 31 percent in outpatient services, 38 percent in physician services, and 33 percent in nursing home services. In the inpatient setting, intensity rose because less complex cases were no longer admitted and because of the greater use of technology noted earlier. Intensity increased in the outpatient setting because of the addition of relatively more complex surgeries and procedures. As for physician services, intensity grew due to the provision of more laboratory and radiological services, and more complex procedures performed in physicians' offices. Nursing home intensity rose because hospitals are discharging sicker patients to nursing homes than in the past.

These trends reflect changes in payment and utilization policies, together with improvements in medical technology. Medicare created direct incentives for hospitals and physicians to shorten or eliminate inpatient stays through PPS and utilization review. Private insurers also adopted extensive review of inpatient utilization. At the same time, changes in medical technology expanded the variety and complexity of services that could substitute for inpatient care.

Other Reasons for Expenditure Increases—Simultaneous with growth in utilization, provider supply also changed. The number of hospitals and beds began to decline in the early and mid-1980s. However, hospitals did not reduce the supply of beds as quickly as inpatient utilization dropped.

Hospitals adjusted to falling inpatient utilization by developing ambulatory care programs and units. Similarly, the number of competing providers like ambulatory surgical centers (ASCs), urgent care centers, and diagnostic imaging centers has increased rapidly. The number of physicians and non-physician practitioners has also grown. A greater supply of health care resources may have been needed to meet existing demand, but expanded supply also created incentives for individuals to use new services and technologies. (Supply is discussed in greater detail in Chapter 4.)

The profitability of hospitals and the level of physician earnings may be additional factors driving up expenditures. Hospital total margins were, on average, higher in the 1980s than in the 1970s. However, this trend peaked in the mid-1980s. Throughout the decade, the average income of physicians compared with the average compensation of all employees was much higher in the United States than in many other industrialized countries. In 1987, for example, U.S. physicians had 5.4 times more income than the average U.S. citizen, while United Kingdom physicians received 2.4 times that country's average income, and Canadian physicians 3.7 times average income.[11] Moreover, even with increases in physician supply, real income per physician rose 15 percent from 1979 through 1987.

PAYERS AND PROGRAMS

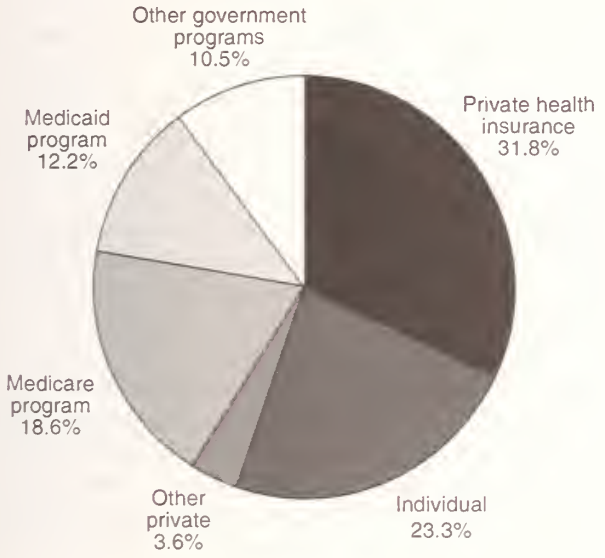
Overall spending for health care is affected by the way health services are financed. In the United States, health care is paid for by the Federal and state governments, businesses, and individuals. The share of health care spending by the major sources of payment remained stable between 1980 and 1990. The rapid rise in health care expenditures, however, outpaced the rate of increase in government revenues, business receipts and profits, and the incomes of most segments of the population. Spending on health care has thus become a more significant expense for all payers.

Expenditures by the different payers support various health care programs. Federal government expenditures fund Medicare, Medicaid, and other health programs. State governments directly fund Medicaid and hospital subsidies, as well as other health services. Business spending goes toward the employer share of private health insurance premiums. Finally, individuals pay for health insurance premiums, out-of-pocket costs, and other health-related expenses.[12] These payers' spending trends and the programs they support are discussed below.

Government

Expenditures for government health care programs represented about 41 percent of all personal health care spending in 1990 (see Figure 1-6). Government expenditures increased by $27 billion in 1990, to $242 billion. The Federal government spent 12 percent more on health care in 1990 than in 1989, while state and local governments spent 15 percent more.

Figure 1-6. Personal Health Care Expenditures, by Program, 1990



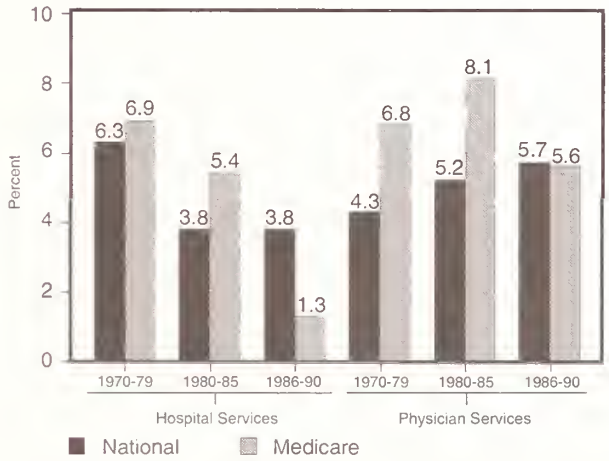
Note: Individual excludes premium payments.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Health care expenditures are continuing to rise as a share of government budgets. Compared with the other major domestic components of the Federal budget, for example, health expenditures increased second only to interest on the national debt during the 1980s.[13] Health spending also rose as a proportion of state and local government budgets. In 1990, personal health care expenditures consumed 8 percent of all state and local spending, compared with 6 percent in 1980.

Medicare—In 1990, the Medicare program accounted for about 61 percent of all Federal spending on health care and 19 percent of all personal health care expenditures. Medicare spending increased faster than total national health spending until the mid-1980s, but grew at a slower pace after that point (see Figure 1-7). Much of this success in controlling expenditures was due to a slowdown in the growth of spending for hospital services since Medicare physician payments continued to rise, on average, at the rate of change for all services.

Figure 1-7. Change in Real National and Medicare Hospital and Physician Expenditures, 1970–1990 (Per Capita and Per Enrollee)



SOURCE: ProPAC updated graph based on information from the Health Care Financing Administration, Office of the Actuary.

From 1980 to 1990, the rate of increase in real Medicare spending varied considerably by site of service (see Table 1-4). The real growth in Medicare inpatient hospital expenditures dropped dramatically after 1984, rising less than population growth until 1989. By contrast, Medicare physician and outpatient hospital spending remained relatively high, although it declined slightly after 1986. Real spending for skilled nursing facility (SNF) services remained relatively constant until the latter part of the decade when the Medicare Catastrophic Coverage Act was passed and litigation forced HCFA to interpret eligibility for SNF care more liberally.

People with end-stage renal disease (ESRD) can qualify for Medicare coverage of dialysis treatments and all Part A and Part B services. Between 1984 and 1989, the expenditures for all Medicare-covered services these individuals use grew 13 percent a year. Much of this increase was due to the rapidly expanding population receiving dialysis

Table 1-4. Change in Real Medicare Benefit Payments, by Selected Type of Service, 1981-1990 (In Percent)

Year	Part A		Part B	
	Inpatient Hospital	Skilled Nursing Facility	Physicians	Outpatient Hospital
1981	9.5%	0.2%	9.3%	8.2%
1982	8.9	2.9	13.2	12.2
1983	6.8	2.4	12.5	11.8
1984	7.1	2.8	5.4	9.8
1985	2.2	-0.4	6.3	13.0
1986	0.7	-2.5	11.1	17.0
1987	1.0	5.3	9.4	10.3
1988	1.6	45.6	6.1	8.5
1989	3.5	242.7	5.7	3.6
1990	2.6	-32.3	3.9	6.6

SOURCE: Health Care Financing Administration, Office of the Actuary.

services. On average, the number of ESRD beneficiaries rose by 9 percent per year, in contrast to 2 percent annually for the overall Medicare population.

The Congressional Budget Office (CBO) projects that total Medicare Part A outlays (inpatient hospital, SNF, hospice, and home health) will climb by $47.1 billion in fiscal years 1992 through 1997 (see Table 1-5). Medicare inpatient outlays are projected to increase an average of 10 percent per year during this period, while SNF outlays are expected to rise 9 percent a year, hospice outlays 15 percent per year, and home health outlays 14 percent a year.[14]

Part B outlays (physicians, outpatient hospital, and other providers) are projected to increase by $46 billion in fiscal years 1992 through 1997. Physician payments are expected to rise at the slowest rate—12 percent per year. Hospital outpatient outlays are projected to increase at 18 percent per year, independent laboratory expenditures at 22 percent per year, and medical equipment spending at 13 percent per year.

The Administration's fiscal year 1993 budget to the Congress proposed reductions of $12 billion from Medicare in fiscal years 1993 through 1997, compared with projected spending. About 39 percent of these reductions, or $4.6 billion, would come from hospital services. This would be achieved primarily by delaying payment rate updates by three months, from October to January, in every year. Another 40 percent would come from Part B payment changes, which would lower the budget by $4.8 billion. These include changes in payments for supervisory anesthesia services, medical equipment, and laboratory services. The rest of the reductions would result from raising the Medicare Part B premium for high-income individuals, which has been unsuccessfully proposed for several years.

Last year, the Administration proposed substantially higher reductions of roughly $27 billion from Medicare in fiscal years 1992 through 1996. About 49 percent would have come from hospital payments, 8 percent from changes in Part B, and the rest from other program changes. However, most of these cuts were never adopted.

Medicaid—Medicaid, a medical assistance plan for certain narrowly defined vulnerable populations, is jointly funded by the Federal and state governments and administered by the states. The

Table 1-5. Medicare Baseline Estimates, 1991-1997 (In Billions)

Year	Part A		Part B		Medicare Outlays and Premiums			Annual Increase in Net Medicare Outlays
	Outlays	Annual Increase	Outlays	Annual Increase	Total*	Part B Premiums	Net	
1991	$69.6	--	$47.0	--	$116.6	$12.0	$104.5	--
1992	77.4	11.1%	53.6	14.0	131.0	12.6	118.0	12.9%
1993	84.8	9.6	60.7	13.3	145.5	14.4	130.5	10.6
1994	83.7	10.4	68.3	12.5	161.9	16.6	144.7	10.9
1995	103.2	10.2	77.4	13.4	180.6	18.9	161.0	11.3
1996	113.8	10.3	87.8	13.3	201.6	20.3	180.6	10.8
1997	124.5	9.4	99.3	13.1	223.8	21.3	201.7	10.5

Note: The baseline is a benchmark for measuring the budgetary effects of proposed changes in Federal spending given that current policies remain in effect.

* Total also includes Part A purchased coverage.

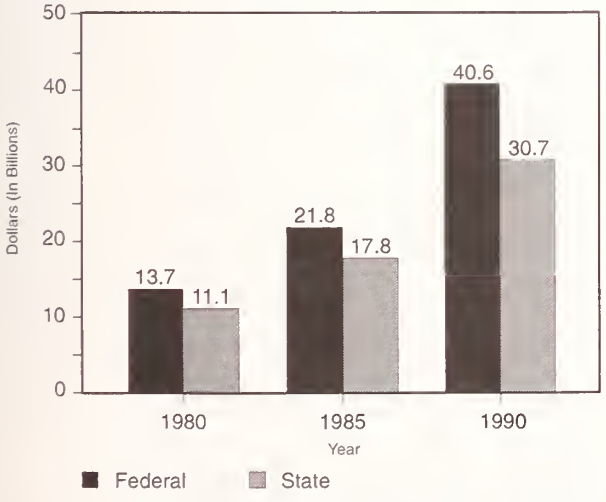
SOURCE: Congressional Budget Office.

Federal government varies its rate of contribution according to the per capita income in the state. Although some benefits and eligibility criteria are required by the Federal government, states can exercise considerable discretion in determining their Medicaid payments, benefits, and eligibility.

The Omnibus Budget Reconciliation Act (OBRA) of 1986 required Medicaid coverage of single pregnant women who have children and whose incomes were below 135 percent of the poverty line. Almost all states had complied voluntarily with this standard by 1986, and the trend toward expanded coverage for pregnant women and their children has continued into the 1990s.

Medicaid spending accounted for 30 percent of Federal and state government health care outlays and 12 percent of total U.S. personal health care expenditures in 1990. The Federal share of Medicaid spending rose from 55 percent to 57 percent between 1980 and 1990, and the growth in both Federal and state expenditures accelerated after 1985 (see Figure 1-8). Many states implemented special provider tax and donation programs in the late 1980s and early 1990s that increased Federal matching payments faster than state outlays. Consequently, the Federal share of Medicaid payments will continue to expand until new legislative limitations on these programs take effect.

Figure 1-8. Federal and State Medicaid Spending, 1980–1990 (In Billions)



SOURCE: Health Care Financing Administration, Office of the Actuary.

In 1990, Medicaid paid for 11 percent of all hospital services, 4 percent of physician services, 45 percent of nursing home services, and 15 percent of home health care services. The share of nursing home services paid by Medicaid declined three percentage points between 1980 and 1990, while the program's share of home health care expenses increased eight percentage points.

CBO has projected Medicaid outlays to rise from $92 billion in 1991 to $222 billion by 1997. The Federal share of these outlays is projected to grow to $126 billion and the state share to $95 billion. This reflects continuing eligibility expansions, the shifting of individuals from state-funded programs into Medicaid by state governments, and successful lawsuits by providers to increase payments.[15]

As Medicare and Medicaid consume an increasing portion of Federal and state budgets, they will likely remain a target for proposed budget cuts. CBO estimates that under current policies, Federal spending for health care will climb to nearly 22 percent of the budget by 1997 and to 28 percent by 2002.

Private Health Insurance

The share of total personal health expenditures paid by private health insurance grew during the 1980s, accounting for 32 percent of the total in 1990. This increasing share occurred because premiums, which are attributed to the insurance category, rose whereas out-of-pocket spending, which is attributed to individuals, fell.

Private health insurance is a major source of payment for hospital and physician services but not for long-term care. Insurance companies paid for about 35 percent of hospital care, 46 percent of physicians' services, and 1 percent of nursing home care. While private insurers financed a slightly smaller proportion of hospital services in 1990 than in 1980, their share of payments for physician services increased by three percentage points during this period.

Private health insurance in the United States traditionally has been tied to the workplace. The proportion of health care expenditures paid for by employers did not change throughout the 1980s. But growth in the absolute level of employer health

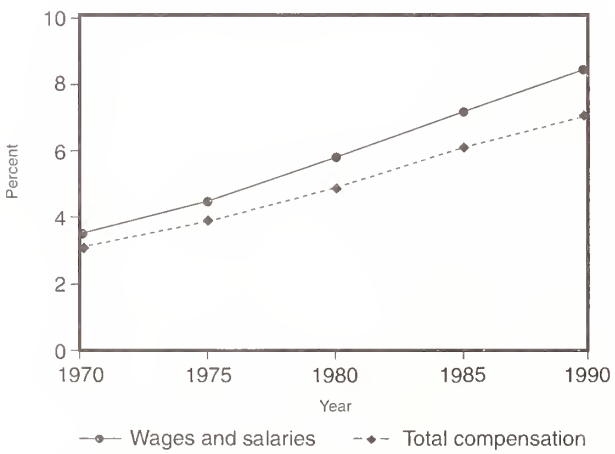
care spending rose sharply because of the increase in total health care expenditures. Health benefits now represent a larger portion of employer wages and total compensation than ever before, even though employers are not paying a larger share of the health care bill (see Figure 1-9). When the employee share of private health insurance premiums is included, the proportion of wages devoted to premiums is even higher.[16] The increase in the proportion during the 1980s would be smaller however, because employee premium contributions were not growing as fast as employer contributions.

Individuals

Although Medicare and private insurance provide financial protection from health care costs, insured persons with both types of coverage still pay directly for some portion of their health care expenses. This section describes trends in expenditures made by individuals, with separate descriptions of the health care expenses of Medicare beneficiaries and others.

Trends in Expenditures—The majority of an average individual's health expenditures are out-of-pocket payments (deductibles, coinsurance, payments for uncovered services, and balance bill expenses), which represent about 23 percent of all spending. In addition, individuals pay for a portion of private health insurance premiums, Medicare Part B premiums, and employee payroll taxes for the Medicare program. Total household spending was 35 percent of all health expenditures in 1990, a drop from 38 percent in 1980.

Figure 1-9. Business Spending on Health Services as a Share of Total Compensation and Wages and Salaries, 1970–1990 (In Percent)



SOURCE: Health Care Financing Administration, Office of the Actuary.

From 1980 to 1990, household spending shifted from out-of-pocket costs to premiums. Premium payments made up 40 percent of household health care spending in 1990 compared with 30 percent in 1980. However, the employer's contribution to health insurance premiums grew slightly faster than the employee's contribution, 11 percent and 10 percent, respectively. Moreover, employee-paid premiums as a percentage of all premiums dropped from 25 percent in 1980 to 23 percent in 1990.

Out-of-pocket spending decreased from 25 percent of total health spending in 1980 to 21 percent in 1990. The decline in these costs as a share of total and household spending may have been related to the increased use of managed care organizations, which typically require low deductibles, have no or limited coinsurance, and cover more services.

Medicare Beneficiaries—The elderly receive health insurance coverage for hospital, physician, and other services through Medicare. Beneficiary cost sharing for Medicare-covered services consists of deductibles and coinsurance for Hospital Insurance (Part A) as well as premiums, deductibles, and coinsurance for physician services and other Part B services.

Most Medicare beneficiaries have supplemental insurance to cover Medicare cost sharing. These policies are either purchased by the individual or provided by a former employer. Medicaid pays Medicare cost sharing expenses for the poor elderly who qualify.

Medicare and most of the supplemental insurance plans do not provide coverage for some acute and most nonacute care services, including most long-term care. Custodial long-term care, eyeglasses, and routine dental care, for example, are excluded. The elderly generally pay for these services themselves unless they qualify for Medicaid. Medicaid pays for long-term care when income requirements are met.

Medicare beneficiaries were liable for about $32 billion in deductibles, coinsurance, and balance bill

amounts in 1990. Liabilities increased throughout the 1980s by an average of about 12 percent per year. However, the beneficiary share of total expenditures has remained stable. (For more information on beneficiary liabilities, see Chapter 5.)

ACCESS PROBLEMS AND UNMET NEEDS

Despite the high level of spending on medical care in the United States, numerous unmet needs and access problems persist. First, almost everyone faces substantial increases in insurance premiums and out-of-pocket costs. Second, the uninsured population continues to rise, affecting the likelihood that these people will receive needed medical care. Additionally, the uninsured increase the financial burden on providers and payers of health care. And finally, the elderly and disabled populations find it difficult to finance long-term care services.

Household Liability

Individuals and families are spending a significant portion of their household incomes on health care. During 1990, U.S. households spent $225 billion on health care, an increase of 6.8 percent over 1989. Between 1980 and 1990, the share of household personal income dedicated to health care rose from 4.1 percent to 5.0 percent.[17] This proportion, however, understates the actual financial impact on families because it does not include indirect expenditures such as payroll, income, and other taxes that finance public health care programs.

A recent study estimated that in 1991, U.S. families spent an average of $4,296 on health care, which amounts to 11.7 percent of average family income.[18] This estimate includes a broad range of expenditures: general taxes (40 percent of total health care spending), out-of-pocket expenses (32 percent), insurance premiums (17 percent), Medicare payroll taxes (9 percent), and Medicare premiums (3 percent). To determine the total financial impact on families, additional indirect costs should be considered, including business-related health expenditures that are reflected in lower wages, higher prices, or reduced payments to shareholders.

Substantial out-of-pocket expenses may affect the ability of some to seek necessary medical care, and may leave them underinsured. Low-income persons may be particularly hard hit. In addition to financial pressures, a number of other problems may affect access to health care services. Shortages of practitioners willing to treat low-income persons in inner-city or rural areas, long waits to be seen, hospital closures, and lack of available beds—particularly in nursing homes—may serve as barriers to health care.

The Uninsured

The lack of public or private health insurance coverage continues to pose a problem for the uninsured themselves and for the entire health care system. Neither the expansion of private health insurance nor the passage of Medicare and Medicaid in 1965 has provided health insurance coverage for the entire U. S. population.

According to the Current Population Survey (CPS), 16.6 percent of Americans under 65, or 35.7 million people, did not have health insurance in 1990. Another 0.3 million persons 65 and over were uninsured, bringing the total number of uninsured to 36 million, or 14.7 percent of the population. Ninety-nine percent of the elderly have health insurance, primarily Medicare, compared with 83 percent of the nonelderly population. The 35.7 million nonelderly uninsured represents an increase from 34.4 million in 1989 and 33.6 million in 1988. This reflects a true increase in the percentage of the population that is uninsured, not merely growth in the population itself.[19] Another study using U.S. Census Bureau data estimated that the number of uninsured increased by 1.3 million between 1989 and 1990, with the total reaching 34.7 million.[20]

Because these estimates count those who lack health insurance at a given point, they understate the true magnitude of the problem by missing many individuals who are uninsured for a short time. Over a 28-month period, it was found that 63 million Americans experienced at least one month without insurance.[21]

Characteristics of the Uninsured—The proportion of the population that is uninsured varies by race, age, income level, and employment status. Most likely to be uninsured are Hispanic Americans, young adults, and poor people. In addition, workers and their dependents make up the vast majority of those without insurance.

In 1990, people of Hispanic origin had the highest probability of being uninsured and were the least likely of any racial or ethnic group to have either private or public health insurance coverage. Overall, 35 percent of Hispanics were uninsured compared with 13 percent of whites and 23 percent of blacks. This trend was consistent for all income levels.[22]

Persons 21 to 24 years old were more likely to be uninsured than any other age category; 29 percent of this group lacked health insurance. Of the nonelderly, those 55 to 64 were the least likely to be uninsured, 12.6 percent.

Young adults may lack insurance for several reasons. They may no longer be covered by a family policy while not yet permanent members of the work force, and in this situation they may find the cost of an individual insurance policy to be prohibitive. They also may not perceive the need for health insurance because they are healthy. Even when they are employed full time, young adults are the most likely to hold jobs in industries that generally do not provide health insurance.

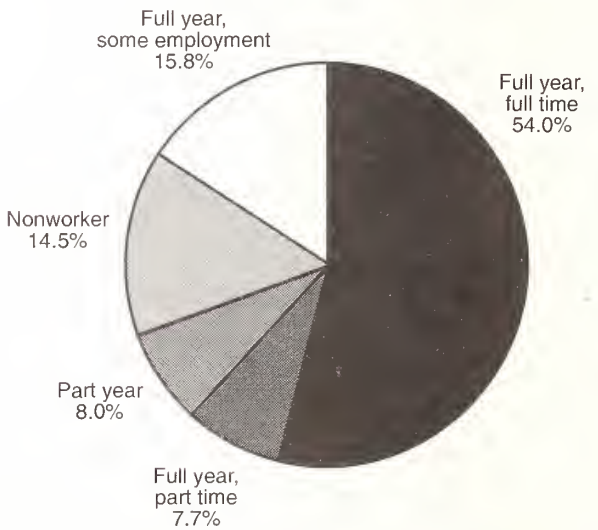
Although young adults are more likely than children to lack insurance coverage, children still represent a substantial portion of the uninsured population. In 1990, about 10 million of those under the age of 18 were without health insurance, which is nearly one-third of all uninsured persons. Most children without coverage, 65 percent, lived in families in which the head of the household was employed the entire year, either full time or part time.

The uninsured are concentrated in low-income families. In 1990, 43 percent of the uninsured were in families with annual incomes of less than $15,000. Of these, 13 percent were in families earning under $5,000; 14 percent were in families with incomes of $5,000 to $9,999; and 16 percent were in families earning between $10,000 and $14,999.

In general, the lower the income level, the higher the percentage of the population without health insurance. Thirty-six percent of the population with annual family incomes of less than $5,000 were without health insurance in 1990, whereas only 6 percent of the population with incomes of $50,000 or more were uninsured. Due to Medicaid coverage, however, the percentage of uninsured persons among those below the poverty level (33 percent) was less than those whose incomes were slightly above the poverty level (38 percent).

In 1990, while workers and their dependents were more likely than nonworkers to have health insurance, 85 percent of the uninsured were members of families headed by workers (see Figure 1-10). Of the 35.7 million uninsured under the age of 65, 19.3 million (54 percent) lived in families where the head of the family worked full time for the entire year. Among work status categories, persons in families headed by a full-time worker who experienced some unemployment during the year—31 percent—were most likely to be uninsured (see Figure 1-11). Families headed by a part-time worker were more likely to lack health insurance than those headed by a year-round, full-time worker, 27 percent versus 13 percent.

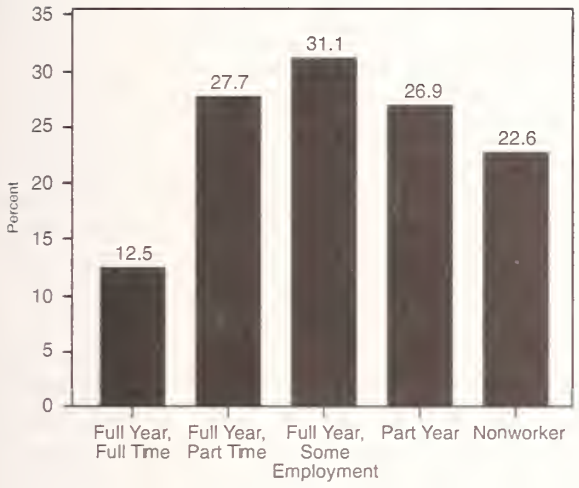
Figure 1-10. Nonelderly Population Without Health Insurance, by Work Status of Family Head, 1991 (In Percent)



SOURCE: Employee Benefit Research Institute analysis of the March 1991 Current Population Survey.

The availability of insurance coverage through employment varies by type of industry and size of the firm. In the nonelderly work force, those who worked in agriculture (39 percent of industry workers), construction (31 percent), retail trade (24 percent), or who were self-employed (22 percent)

Figure 1-11. Proportion of Uninsured Within Work Status Categories, by Work Status of Family Head, 1991



SOURCE: Employee Benefit Research Institute analysis of the March 1991 Current Population Survey.

were most likely to lack health insurance. Of the 19.9 million uninsured workers between 18 and 64 years old, 36 percent were employed by firms with fewer than 25 employees while only 3.2 percent worked in firms of 500 to 999 employees. Twenty-nine percent of workers in firms with fewer than 25 employees were uninsured, compared with only 9 percent in companies with 1,000 or more employees.[23]

During 1990, the average employer's share of medical and medically related costs per employee rose from $2,853 to $3,197.[24] In 1990, only 70 percent of small firms offered some form of health insurance to their full-time employees, compared with 92 percent of medium and large firms in 1989.[25,26] This may be because health insurance coverage is 15 percent to 20 percent more expensive for small businesses compared to large employers.[27]

The cost of employer-sponsored health care increased nearly threefold, from $64.8 billion in 1980 to $186.2 billion in 1989. In 1989, employers paid about 75 percent of this amount. These rising costs may affect the likelihood that employers will offer coverage to their work force. Estimates indicate that the number of uninsured full-time workers and their dependents grew about 28 percent during the 1980s.[28]

Factors that are not under the control of the employer also influence the number of people insured through the workplace. The recent downturn in the economy and its negative effects on employment, as well as an overall increase in health insurance costs that has exceeded growth in personal incomes, have contributed to the rise in the number of companies unable to afford employer-sponsored insurance.[29] Due to changes in the underwriting and marketing practices of the health insurance industry, some employers cannot obtain group coverage at all.

In addition to high health care costs faced by employers, changes in the eligibility criteria of the Medicaid program are another key reason for the increase in the uninsured population. Although Medicaid was designed to provide the poor with health care coverage, the majority of those below the poverty line remain unprotected. Medicaid's categorical approach to eligibility excludes certain low-income groups, including most low-income men and childless couples. Beginning in the 1980s, the Federal government and a number of states attempted to reduce Medicaid expenditures by limiting eligibility and constraining provider payments. Despite a congressional mandate in the late 1980s to expand eligibility and coverage for pregnant women and young children with incomes up to 185 percent of the poverty line, Medicaid still does not cover the majority of the poor. In 1989, only about 40 percent of the population with incomes below the poverty line were covered under Medicaid.[30]

Consequences of Being Uninsured—Individuals who lack health insurance are likely to experience difficulty in receiving needed health care services. Several studies, particularly on hospital usage, have demonstrated that the uninsured experience problems in obtaining access to hospital services. One study found evidence suggesting that the uninsured were sicker on hospital admission, had fewer tests and shorter lengths of stay for some conditions, and were more likely than privately insured patients to die in the hospital.[31]

A recent study examined the utilization of physician services by the uninsured. Physician involvement with uninsured patients varied significantly by medical specialty, among other factors. Psychiatrists, pediatricians, and general/family

practitioners treated the highest percentage of uninsured persons, ranging from 14 percent to 17 percent of their practices. Physicians in specialized internal medicine, general internal medicine, and general surgery had the lowest proportions, between 7 percent and 9 percent.[32] Many uninsured individuals are unable to obtain primary care from private practitioners. Their only recourse in many cases is to use hospital emergency rooms, where they usually face much longer waits for service than they would experience in physicians' offices.

Although the uninsured themselves are most directly affected by the lack of coverage, the problem also has an impact on several other groups. Providers of health care—particularly hospitals—experience financial strains when they furnish uncompensated care. Payers of health care, including businesses and insurance companies, are burdened financially when their premiums rise as a consequence of being required to cover the costs of the medically indigent. And individuals must pay for escalating employee insurance premiums and out-of-pocket costs caused by the financial pressure on their employers.

Several state-level initiatives have been undertaken to address the problem of the uninsured. For example, Hawaii has made certain that nearly its entire population has health insurance coverage by mandating that all employers provide coverage for their workers and implementing a state program for those without Medicaid coverage or employer-sponsored insurance. Similarly, Massachusetts has passed legislation to require employer-based insurance, although the plan has not yet been implemented. Minnesota's legislature recently approved a health reform bill to provide coverage to some 260,000 uninsured state residents by 1994. This state-administered plan, which is estimated to cost $200 million a year, would be financed by a 5 cent increase in the state's cigarette tax plus a 2 percent surtax on health care providers.[33]

Financing Long-Term Care

As the population ages, more people are expected to require long-term care services. These include health, social, housing, and related services needed by persons with physical or mental limitations that compromise independent living.[34] Estimates for 1990 indicate that there are 31.8 million persons 65 or older, and that those over 80 are the fastest-growing age group. Older people are increasingly facing substantial long-term care expenses, which could affect their access to these services.[35] Middle-income elderly, in particular, will be faced with tough financial pressures when seeking long-term care. Medicaid helps to finance nursing home care for the poor elderly, while wealthy elderly are better able to pay for care directly. The middle-income elderly, however, must attempt to pay directly, exhaust their assets to qualify for Medicaid, or go without care.

Consumers themselves are a major source of financing for long-term care services, paying directly for 45 percent of all nursing home care in 1990. The Medicaid program also paid 45 percent, Medicare 5 percent, and private insurance 1 percent.[36] Medicaid patients are required to apply most of their Social Security benefits to the cost of their nursing home care, and a significant portion of the payments made by individuals also comes from these benefits.

The private long-term care insurance market has been growing, and insurance may become a more significant source of financing for long-term care in the future. Over 130 companies sold long-term care insurance in 1990, an increase of 79 percent from 1987. The number of policies sold doubled during a two and one-half year period, from 815,000 in December 1987 to more than 1.65 million in June 1990.[37] Almost all policies provide some coverage for both nursing home and home health care.[38]

Even though long-term care insurance is becoming more prevalent, it is expensive and likely to be unaffordable to many of those who need it. Average annual premiums for a plan that pays $80 a day for nursing home care, $40 a day for home health care with a 20-day deductible period, and has a four-year maximum coverage period for nursing home care were $658 for a person at 50, $1,395 at 65, and $4,199 at 79, according to a recent study.[39]

FACTORS INHIBITING COST CONTAINMENT

The chapter thus far has documented a scenario of rapidly rising health care expenditures coupled

with access problems and other unmet needs that persist even with such large expenditures. Escalating provider production costs make it much more difficult for the organizations that fund health care expenditures, particularly government and private business, to expand insurance coverage and benefits to address these problems. Consequently, policy makers have recently shown heightened interest in approaches that might permit greater control of provider production costs. Progress toward cost containment, however, has been elusive.

Cost containment efforts in the health care field are influenced by the complex organization of resources used in the delivery of care and the pluralistic financing system. There are overlapping sites of care for many types of treatment, such as private physician offices, free-standing clinics, and hospital outpatient departments for ambulatory care services. In most health care settings, payment for services combines various government programs and private insurance mechanisms with direct payment by patients and employers. Thus, cost containment initiatives that affect only one sector of the delivery or financing system are rarely capable of controlling the overall rate of increase in health care expenditures. Further, these efforts often have unintended consequences in other parts of the health care system that partly offset their cost containment potential.

The acute care services of hospitals have been the focus of many cost containment proposals, because these services form the largest single component of the health care delivery system. In addition, attempts to control costs through prospective payment are aided by the capability to measure patient resource use. With the advent of diagnosis-related groups (DRGs) and database development efforts, this capability was implemented for hospital acute care services in the early 1980s. In recent years, advancements in output measurement techniques and data quality have made it feasible to begin pursuing cost containment through prospective payment methods for other services.

The DRG-based prospective payment system for Medicare inpatient services has been one of the key initiatives in the national effort to contain health care costs for nearly a decade. The average hospital per-case cost increase was held to just over 7 percent in the first year of PPS (1984) and to about 8 percent in the second year. Subsequently, the increases returned nearly to pre-PPS levels, averaging over 9 percent for the next four years. In 1990, the increase moderated to about 8 percent again, which may portend better industry performance in future years.[40]

During this seven-year period, PPS operating, capital, and direct medical education payments per case rose an average of 7.8 percent per year, surprisingly close to the average annual increase in per-case costs of 8.5 percent. However, this comparison is heavily influenced by the experience of 1984 and 1985, when Medicare payments were unexpectedly high during the transition to prospective payment. In the five years since this transition period, the per-case PPS payment increases have averaged 4.8 percent per year, while the corresponding average cost increase has been 8.8 percent. Obviously, the expected slowing of the growth in hospital costs in response to PPS has not materialized. In this section of the chapter, the Commission addresses the factors that have prevented PPS from performing as expected in controlling the costs of producing services.

Other Sources of Hospital Revenue

The primary reason for the industry's ability to keep spending increases above the target level set by Medicare payment increases is that most hospitals have generated sufficient revenue from other sources to make up losses they incur from below-cost payments. Much of this revenue comes from charging privately insured patients more than the cost of their care —usually referred to as cost shifting. Hospitals accomplish cost shifting primarily by raising their charges, or the "list prices" of their services. This drives up the payments of any third-party payer that is obligated to pay full charges or that has negotiated a percentage discount from charges.

Hospitals have also produced additional revenue from services not covered by fixed rates, philanthropic contributions, profits from non-patient care business ventures, and government operating subsidies. Since PPS has been in effect, government operating subsidies have increased less than overall hospital costs, but all other non-patient care revenue sources have outpaced hospital cost inflation. Since 1984, non-patient care revenue (including

government subsidies) has risen from 4.3 percent of total hospital revenue to 4.8 percent.[41]

The Need to Cost Shift

Cost shifting, supplemented by non-patient care income, generates revenue to cover losses from uncompensated care (encompassing both charity care and bad debts) and below-cost payments from Medicaid and Medicare. Losses from all of these sources climbed significantly during the 1980s. The portion of uncompensated care costs that is not covered by government subsidies increased from 3.7 percent of total hospital expenses in 1980 to 4.7 percent in 1990 (see Table 1-6). Medicaid payment losses rose even more sharply during this period, from 0.9 percent to 2.3 percent of expenses. And the industry has gone from earning a 14.5 percent margin on Medicare operating payments in the first year of PPS to a loss of nearly 4 percent in the seventh year. (See Chapter 2 for additional information.)

As noted earlier, the seven-year average of Medicare per case payment increases (covering operating, capital, and direct medical education costs) was 7.8 percent. The Commission believes that this level of annual update should have been sufficient to meet hospital financial requirements. A significant portion of hospitals' patient care losses during the 1980s would not have occurred if their cost increases had been consistent with Medicare payment hikes since PPS began.

In 1990, Medicare payments covered about 90 percent of the cost of treating its patient load, while state Medicaid programs paid 80 percent of their patient costs (see Table 1-7).[42] Although accounting for only a small proportion of hospital patient care, other government programs (such as CHAMPUS, workers' compensation, and local indigent care programs) on average paid slightly more than costs. Finally, only 21 percent of uncompensated care costs were covered in the form of operating subsidies from state and local governments. To generate additional revenue, hospitals obtained payments covering almost 128 percent of the cost of treating privately insured patients. And there would have been even more pressure to raise charges without non-patient care income, which was sufficient to cover more than 3 percent of hospitals' costs.

The Pattern of Cost Shifting

While providing an overall hospital revenue framework, these aggregate statistics do not reflect the tremendous variation in the level of payments made relative to costs. In 1990, hospitals set their charges, on average, at 148 percent of their costs. This markup has increased from about 120 percent of costs in 1980.[43] Billed charges can be viewed as the high end of the payment-level spectrum, and at least a significant minority of private insurers pay hospitals at this level. About half of all employees with insurance coverage in 1991 had conventional insurance policies, and more than half of the

Table 1-6. Uncompensated Care Costs and Medicaid Losses, as a Percent of Total Hospital Expenses, 1980-1990

Year	Uncompensated Care Costs (In Billions)*	Uncompensated Care Costs as a Percent of Total Expenses	Medicaid Losses (In Billions)	Medicaid Losses as a Percent of Total Expenses	Total Indigent Care Losses (In Billions)	Total Indigent Care Losses as a Percent of Total Expenses
1980	$2.8	3.7%	$0.7	0.9%	$3.5	4.6%
1981	3.5	3.8	0.7	0.7	4.1	4.6
1982	4.1	3.9	0.9	0.9	6.0	4.8
1983	4.8	4.1	1.1	0.9	5.9	5.0
1984	5.6	4.6	1.4	1.1	7.0	5.7
1985	6.0	4.6	1.2	0.9	7.2	5.5
1986	6.9	4.9	1.7	1.2	8.6	6.1
1987	7.2	4.7	2.6	1.7	9.9	6.5
1988	8.1	4.8	3.5	2.1	11.6	6.9
1989	8.9	4.8	4.2	2.3	13.1	7.1
1990	9.5	4.7	4.6	2.3	14.1	6.9

Note: Covers all community hospitals.

* Calculated net of government operating subsidies.

SOURCE: American Hospital Association Annual Survey data, 1980-1990.

Table 1-7. Aggregate Hospital Costs and Payments, by Payer Group and Non-Patient Care Revenue Source, 1990

Payer or Other Source	Cost Share	Cost Amount (In Billions)	Payment Share	Payment Amount (In Billions)	Payment to Cost Ratio
Medicare	38.4%	$ 78.0	33.2%	$ 69.8	89.6%
Medicaid	11.3	23.0	8.7	18.4	80.1
Other government payers	1.6	3.2	1.6	3.4	106.4
Uncompensated care	5.9	12.1	1.2	2.5*	21.0
Private payers	40.1	81.6	49.5	104.1	127.6
Other operating revenue	2.7	5.5	3.7	7.8	143.0
Non-operating revenue	--	--	2.1	4.6	--
Total	100.0	203.2	100.0	210.6	103.6

Note: Analysis covers all community hospitals. Other operating revenue is assumed to have associated costs proportional to the hospital's overall relationship of costs to charges. Non-operating revenue (consisting primarily of donations and investment income) is assumed to have no associated costs.

* Operating subsidies from state and local governments.

SOURCE: Calculated by the American Hospital Association according to ProPAC specifications, using Annual Survey data.

insurers offering conventional policies reported paying billed charges (see Table 1-8). Even among health maintenance organizations (HMOs) and preferred provider organizations (PPOs), 15 percent or more pay billed charges to at least some hospitals. At the low end of the spectrum are the state Medicaid programs, which on average paid only slightly more than half as much relative to the costs of treating their patients as insurers paying billed charges.

The range represented by Medicaid payments and billed charges varies substantially by state (see Table 1-9). In 1989, three states—Arizona, Maryland and New Jersey—paid hospitals more than the full costs of caring for Medicaid patients. But at the other end of the scale, Illinois covered only 56 percent of costs and nine other states paid less than 70 percent. Billed charges covered 171 of costs in Nevada in 1989 and exceeded 150 percent in four other states. In Maryland and New Jersey, conversely, charges were only 112 percent and 110 percent of costs, respectively.

Those states with the highest Medicaid payments relative to costs, Maryland and New Jersey, also

Table 1-8. Market Share and Hospital Payment Method, by Type of Insurance Coverage

Hospital Payment Method	Conventional	Health Maintenance Organization	Preferred Provider Organization
Percent of employees enrolled[a]	50%	26%	24%
Percent of insurers using payment method[b]			
Billed charges	59	15	21
Discounted charges[c]	40	51	93
Flat per diem		100	84
DRGs		31	34
Capitation		26	

[a] Estimated at the national level from available regional data.

[b] Determined for Health Insurance Association of America members only, underrepresenting the experience of independent HMOs and Blue Cross plans. Respondents identified all payment methods used for at least some hospitals.

[c] The survey asked about "usual and customary charges" and "discounted usual and customary charges," although the distinction between the two is unclear. Within each insurance type, one of these two categories predominated on the survey and that result is shown here.

SOURCE: KPMG Peat Marwick employer survey, 1991, for the employee enrollment data. Health Insurance Association of America member survey, 1990, for the payment method data.

Table 1-9. Comparison of Hospital Billed Charges and Medicaid Payments, 1989 (In Percent)

State	Billed Charges as a Percent of Total Costs	Medicaid Payments as a Percent of Medicaid Costs	Billed Charges as a Percent of Medicaid Payments*
United States	139%	78%	179%
Maryland	112	104	107
New Jersey	110	102	108
Wyoming	111	89	125
North Dakota	122	96	127
Montana	123	97	127
Rhode Island	120	94	128
Arizona	141	108	131
Iowa	123	94	131
Indiana	128	97	132
New York	119	89	134
South Dakota	125	93	134
Maine	128	93	137
Alaska	117	85	137
Minnesota	126	88	143
Massachusetts	120	82	147
Wisconsin	120	80	150
Idaho	130	87	150
New Hampshire	132	87	152
Ohio	131	86	152
Tennessee	142	93	153
Delaware	132	86	153
Mississippi	146	93	157
Louisiana	134	84	159
Washington	127	77	165
New Mexico	132	78	169
West Virginia	144	85	170
District of Columbia	146	84	174
Kentucky	148	85	175
Hawaii	132	75	176
Nebraska	130	74	176
Kansas	140	79	177
Connecticut	129	72	179
Vermont	131	73	180
Michigan	145	80	181
Virginia	143	77	185
Oklahoma	141	74	191
Utah	125	65	193
Florida	161	82	196
North Carolina	137	69	198
Alabama	168	84	200
Georgia	144	72	201
Colorado	135	67	202
Missouri	144	70	206
Arkansas	144	67	215
Texas	145	66	219
South Carolina	155	69	224
Oregon	132	59	224
California	157	66	237
Nevada	171	72	238
Pennsylvania	162	66	246
Illinois	143	56	256

* Calculated by dividing total billed charges as a percent of total costs by Medicaid payments as a percent of Medicaid costs.

SOURCE: American Hospital Association Annual Survey data.

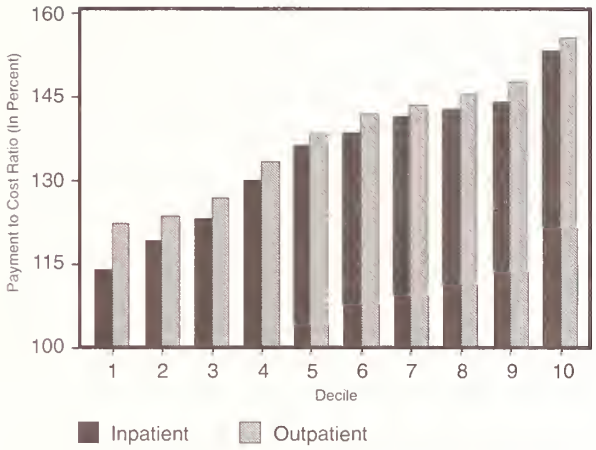
had the smallest range of payments across all payers—less than 10 percentage points. In these states, cost shifting is limited almost exclusively to the amount needed to cover uncompensated care costs, whereas it is a major source of revenue in many other parts of the country. The states with the lowest Medicaid payments generally had the largest overall range, with billed charges being about two and a half times the level of Medicaid payments in Illinois and Pennsylvania.

In addition to state-level differences, there is tremendous variation in payment by private insurer (including individual HMOs) and by employer group. Although there is no publicly available data source for analyzing payment levels for specific insurance companies, ProPAC obtained data showing the average relationship between costs and payments for 58 large employers.[44] On average in 1990, the insurers these employers use paid rates equivalent to 134 percent of the hospital costs attributable to patients covered by their plans. This is about 5 percent higher than the 128 percent national average for private payers cited earlier, which reflects the fact that few HMO claims are included in the database. (HMOs tend to pay less relative to costs than conventional insurance companies.) In addition, none of the employers in the study was located in New Jersey or Maryland (states where almost no cost shifting occurs, as noted earlier).

Comparing specific employer groups, payments for inpatient care ranged from 89 percent of the costs incurred by the employer's patients to 168 percent—nearly twice as much. Overall, the 10 percent of inpatient care paid for at the most favorable terms to the payer covered 114 percent of associated costs, while the 10 percent made at the least favorable terms covered 153 percent (see Figure 1-12). Outpatient payments were, on average, slightly higher relative to costs, and the range was almost as wide. The lowest tenth of outpatient payments covered 122 percent of costs, while the highest tenth covered 155 percent.

Both the need and ability to cost shift vary within and among hospital groups. In a ProPAC analysis of cost shifting in 1989, about 7 percent of hospitals were found to have no net payment losses from the combination of uncompensated care, Medicaid, and Medicare. With no need to cost shift, few of these institutions suffered any financial pressure. At the other end of the spectrum, however, 40 percent of all hospitals were unable to generate sufficient extra revenue from private payers to cover their losses from government programs and uncompensated care, and 10 percent actually lost money on their privately insured patients. (Chapter 2 provides further information about the pattern of cost shifting among hospitals.)

Figure 1-12. The Distribution of Hospital Inpatient and Outpatient Payments for a Sample of 58 Large Employers, 1990 (In Percent)



Note: Each decile represents 10 percent of the total payments for either inpatient or outpatient hospital services made by the study employers in 1990. The ratios show the average payments received relative to costs. The aggregate payment to cost ratio for these employers was 134 percent, compared with the national aggregate of 128 percent as determined using American Hospital Associaion data. The inpatient and outpatient averages were 133 percent and 136 percent, respectively.

SOURCE: MEDSTAT Systems, Inc., under contract to ProPAC.

CONCLUSIONS

The Commission believes that the current level of inflation in health care costs is not sustainable and that cost containment will be vital to efforts to reform the nation's health care system. Failure to reduce the annual cost increases of hospitals and other providers below the double-digit level of recent years, as documented in this chapter, may jeopardize the nation's ability to provide coverage to the uninsured population. It may even erode the breadth of today's insurance coverage. Furthermore, excessive health care inflation has consequences that go beyond the health care sector. It may limit the wage and salary increases

that workers receive; harm private industry's competitiveness in overseas markets; and constrain the nation's ability to fund other important activities, such as education, social services, and infrastructure improvements.

Experience with the Medicare and Medicaid programs over the past decade demonstrates that government spending for hospital services can be controlled through prospective payment, but with less impact on the costs of producing services. With much of the private insurance market's hospital payments unconstrained, the Medicare program does not provide adequate leverage to hold down the increase in overall hospital costs. Even the added pressure brought about by constraints on Medicaid payments in most states has not been sufficient to control costs.

Over nearly a two-decade period, there have been myriad governmental and private cost containment initiatives. During the 1970s, the primary emphasis was on controlling the supply of health care resources through health planning and Certificate of Need programs. In the 1980s, the emphasis changed toward influencing cost trends by controlling payment for services, with prospective payment methods used for many hospital and other acute care services. Simultaneous with attempts to control cost inflation through payment policy, the private insurance market has become more competitive. This competition is characterized by utilization control accomplished partly through a greater market share for HMOs and PPOs, increased contract negotiating between providers and payers, and the publishing of provider prices to promote consumer price sensitivity. However, no single strategy or combination of approaches has established a consistent track record in slowing aggregate cost increases down to an appropriate level.

Both regulatory and competitive strategies may help to curtail cost shifting as a revenue source for hospitals. Most rate regulation programs pursue the goal of reducing cost shifting directly, so that an approved level of overall increase in per-case costs can be maintained across all payers. In at least a few states, this approach appears to have produced the twin benefits of constraining the increases in per-case costs and reducing the disparity in payment for the same services between governmental and private payers and among specific private insurers.[45] In highly competitive markets, cost shifting is sometimes curtailed indirectly. Insurers control their own provider payments, thereby reducing the opportunities for hospitals to make up for reduced payments from some payers by charging others more. In some states, this competitive approach has also resulted in below average per-case cost increases, although not necessarily less disparity in payment rates.[46]

As health care reform is debated in the coming months and years, informed decisions must be made regarding the payment methods and other mechanisms to constrain provider cost increases as insurance coverage is expanded. While no single approach is necessarily the best, the cost containment program eventually adopted cannot rely solely on payment constraints in existing government programs. Cost containment strategies must apply to the entire health care delivery system.

Notes to Chapter 1

1. Information in this section comes from the Health Care Financing Administration's Office of the Actuary.

2. The Department of Commerce has rebenchmarked its GNP and gross domestic product (GDP) figures as of 1992 and is now using GDP as its primary reference standard rather than GNP. Data in this paragraph are based on the best estimates of GNP that were available at the time the national health care estimates were created.

3. U.S. Department of Commerce, Bureau of the Census, *Statistical Abstract of the United States: 1991,* 111th ed. (Washington, DC: U.S. Government Printing Office, 1991)134.

4. Increases in expenditures from the aging of the population and changes in the age and sex composition of the population are captured in utilization and intensity. Thus, not all of the growth in expenditures from utilization and intensity is attributable to the health care sector. However, the impact of the aging of the population on health care spending is relatively small. HCFA's Office of the Actuary has estimated that changes in the age-sex composition of the population will contribute only 4.6 percentage points to the 147 percent increase in total personal health care expenditures from 1990 to 2000. From Sally Sonnefeld and others, "Projections of National Health Expenditures Through the Year 2000," *Health Care Financing Review* 13(1):1-28, Fall 1991.

5. The HCFA cost inflation model discussed here uses a broad definition of intensity. In Chapter 2, ProPAC analyzes intensity in the hospital sector using a more narrow definition, and then measures real case-mix change and productivity change separately.

6. U.S. Department of Commerce, "Health and Medical Services" in *U.S. Industrial Outlook 1992* (Washington, DC: U.S. Government Printing Office, January 1991) 43-1.

7. Sonnefeld and others, "Projections."

8. Katharine Levit and others, "National Health Expenditures 1990," *Health Care Financing Review* 13(1):29-54, Fall 1991.

9. Rhonda J. Peebles and Diane S. Schneidman, eds., *Socio-Economic Factbook for Surgery 1990-1991* (Chicago, IL: American College of Surgery 1991).

10. Robert Berenson and John Holahan, "Sources of the Growth in Medicare Physician Expenditures," *Journal of the American Medical Association* 267(5):687-91, February 5, 1992.

11. U.S. Congress, Congressional Budget Office, *Trends in Health Expenditures by Medicare and the Nation* (Washington, DC: U.S. Government Printing Office, January 1991)73.

12. The funding is more complicated than described. For a further discussion, see Katharine R. Levit, Mark S. Freeland, and Daniel R. Waldo, "Health Spending and the Ability to Pay: Business, Individuals, and Government," *Health Care Financing Review* 10(3):4, Spring 1989.

13. Congressional Budget Office.

14. Information for this section is from the CBO February baseline projections, memorandum dated March 9, 1992.

15. U.S. Congress, Congressional Budget Office, *The Economic and Budget Outlook: Fiscal Years 1993-1997* (Washington, DC: U.S. Government Printing Office, January 1992)57.

16. Katharine Levit and Cathy Cowan, "Business, Households, and Governments: Health Care Costs, 1990," *Health Care Financing Review* 13(2):83-93, Winter 1991.

17. Ibid.

18. Families USA Foundation, *Health Spending: The Growing Threat to the Family Budget,* Washington, DC, December 1991.

19. Jill Foley, *Sources of Health Insurance and Characteristics of the Uninsured — Analysis of the March 1991 Current Population Survey,* Employee Benefit Research Institute, Issue Brief No. 122, February 1992.

20. Bureau of National Affairs, Inc. "Total Uninsured Rose 1.3 Million in 1990, Census Bureau Data Show," *BNA's Medicare Report* 2(1):722, December 27, 1991.

21. Katherine Swartz, and Timothy D. McBride, "Spells Without Health Insurance: Distributions of Durations and Their Link to Point-in-Time Estimates of the Uninsured," *Inquiry* 27:281-82, Fall 1990.

22. Foley, *Health Insurance,* 16, 30-32.

23. Ibid.

24. U.S. Chamber Research Center, *1991 Employee Benefits Report* (Washington, DC:U.S. Chamber of Commerce, 1991).

25. U.S. Department of Labor, Bureau of Labor Statistics, *Employee Benefits in Small Private Establishments, 1990,* Bulletin 2388, September 1991, 34-61.

26. U.S. Department of Labor, Bureau of Labor Statistics, *Employee Benefits in Medium and Large Firms, 1989,* Bulletin 2363, June 1990, 39-68.

27. Molly Joel Coye, "Health Care for the Uninsured," *Issues in Science and Technology* 7:56-62, Summer 1991.

28. Levit and Cowan, "Business, Households," 86-87.

29. Health Insurance Association of America, *Source Book of Health Insurance Data* (Washington, DC: HIAA, 1991).

30. Emily Friedman, "The Uninsured—from Dilemma to Crisis," *Journal of the American Medical Association* 265(19):2491-95, May 15, 1991.

31. Jack Hadley, Earl P. Eisenberg, and Judith Feder, "Comparison of Uninsured and Privately Insured Hospital Patients," *Journal of the American Medical Association* 265(3):374-79, January 16, 1991.

32. David Blumenthal, and John A. Rizzo, "Who Cares for Uninsured Persons?" *Medical Care* 29(6):502-21.

33. "Minnesota Passes Health Reform Bill," *Medicine & Health* 46(16):1, April 20, 1992.

34. Charlene Harrington and others, "A National Long-term Care Program for the United States," *Journal of the American Medical Association* 266(21):3023-29, December 4, 1991.

35. "Long-Term Care Financing Proposals: Their Costs, Benefits and Impact on Private Insurance," *HIAA Research Bulletin,* January 1991.

36. Percentages are from the Health Care Financing Administration, Office of the Actuary, 1990.

37. "Long-Term Care Insurance: A Market Update," *HIAA Research Bulletin,* January 1991.

38. Ibid., 4-6.

39. Ibid., 17-18.

40. Data from the American Hospital Association Annual Survey, 1983-1990.

41. Data from the American Hospital Association National Hospital Panel Survey. See Chapter 2 for more detail.

42. These payment to cost ratios cover both inpatient and outpatient services. The ratio for Medicare inpatient services is slightly higher than 90 percent, the ratio for outpatient services slightly lower.

43. Data from the American Hospital Association Annual Survey, 1990.

44. Data from MEDSTAT Systems, Inc. of Ann Arbor, Michigan. The employers represented all had at least 4,000 employees and were

located throughout the country. However, the Midwest is overrepresented. The database includes claims for 222,000 inpatient cases and 1,192,000 outpatient visits in 1990; the patients were treated in 3,124 different hospitals. For purposes of reducing hospital charges to costs, ProPAC provided a cost to charge ratio for each of the hospitals based on Medicare Cost Report and American Hospital Association Annual Survey data.

45. Prospective Payment Assessment Commission, *Optional Hospital Payment Rates for Private Payers Based on Medicare's Methods (As Specified in H.R. 3626),* Congressional Report C-92-03, March 1992, 56-59 and 73-75.

46. Ibid.

Chapter 2

Hospital Payments, Costs, and Financial Condition

Chapter 2

Hospital Payments, Costs, and Financial Condition

The financial status of hospitals is determined by their expenses and the payments they receive from third-party payers and other sources. Payments and expenses, in turn, are determined by many factors, including the types of services hospitals provide and how efficiently they provide them; the numbers and types of patients needing hospital care; the way state and Federal governments, private insurers, and others pay for hospital services; and other aspects of the environment in which hospitals operate. This chapter focuses on trends in payments and costs covered by Medicare's prospective payment system (PPS) and for hospitals as a whole.

First, the distribution of PPS payments across hospital groups and by payment category is described to provide an overview of the system and its components. Then the effects of payment policy and other changes are examined to gain an understanding of the determinants of the level and distribution of PPS payments over time. This is followed by discussions of trends in PPS operating costs and payments and the resulting PPS operating margins.

The second section addresses the overall financial status of the hospital industry. It begins with a discussion of trends in hospital resources, including capacity and occupancy rates, employment, nonlabor expenses, productivity, and capital. Trends in total hospital expenses and revenues are described next, followed by an analysis of total hospital margins, which covers both inpatient and outpatient care to all patients and non-patient care activities.

The third section addresses the issue of hospital cost shifting. Hospitals receive different levels of payment for their services from different payers. PPS and total margins are contrasted, and evidence is presented on relative payment levels for several major payer categories and hospital groups.

The chapter concludes with a discussion of the implications of this information for evaluating current policy and formulating plans for future analysis.

PAYMENTS AND COSTS UNDER PPS

The amount and distribution of PPS payments are major policy issues with important consequences for both hospitals and Medicare beneficiaries. Each year, changes in the Medicare program affect the amount and distribution of payments. These changes, in combination with the trend in operating costs, determine the financial performance of hospitals under PPS.

Distribution of PPS Payments

Under PPS, each hospital receives a fixed payment rate per discharge for each type of case. Types of cases are defined by the diagnosis-related group (DRG) into which each patient is classified. A hospital's basic payment rate for each DRG is based on a national standardized payment amount, which differs according to the hospital's classification as a large urban, other urban, or rural facility.[1]

To account for variation in wage rates and other forms of compensation across areas, the labor-related cost portion of the hospital's standardized payment amount (about 70 percent of the total) is adjusted by a wage index for the hospital's labor market area. The wage index measures the relative level of wages for hospital workers in each urban or rural area compared with the national average level of hospital wages. The hospital's wage-adjusted standardized amount is then multiplied by the national relative weight for each DRG to obtain the hospital's basic payment rate for the DRG. The weight for each DRG indicates the national average relative costliness of treating cases in the DRG compared with the national average cost of care for all PPS cases.

The basic DRG payment rate therefore reflects the hospital's location, the level of local wage rates, and the relative costliness of the patients. These factors partly explain the higher PPS payment levels for urban versus rural hospitals. Urban hospitals start with higher standardized payment amounts, based on historical and continuing differences in costs per discharge.[2] Moreover, urban hospitals also tend to be located in labor market areas that have higher wage rates, and they are likely to treat a more complex and costly mix of Medicare patients.

In addition to receiving their basic DRG rates, hospitals get extra payments under PPS for cases with unusually long stays or extraordinarily high costs (outliers). An adjustment is made as well for hospitals that operate graduate medical education programs (for the training of residents) or serve a disproportionate share of low-income patients. These features of the payment system also result in higher payments for urban hospitals. Hospitals in urban areas are much more likely than those in rural areas to have outlier cases, and most teaching and disproportionate share hospitals are located in urban areas.

In fiscal year 1992, hospitals will receive an estimated $54.9 billion in PPS payments. Of that amount, $49.1 billion will be paid from the Medicare Hospital Insurance (Part A) Trust Fund. The remaining $5.8 billion will be paid by beneficiaries through Medicare cost sharing requirements (inpatient deductibles and copayments).[3]

The Prospective Payment Assessment Commission's (ProPAC) estimates for fiscal year 1991 show that PPS payments continue to vary substantially among hospital groups (see Table 2-1). For example, 53 percent of all PPS hospitals are located in urban areas. However, urban hospitals account for 78 percent of all PPS discharges, and they receive 85 percent of all PPS payments. By contrast, rural hospitals account for 47 percent of all PPS hospitals and 22 percent of all PPS discharges but only 15 percent of PPS payments.

As hospital size increases, the relative share of PPS payments tends to rise. For instance, 21 percent of all PPS hospitals are rural hospitals with fewer than 50 beds, but they account for only 3 percent of PPS discharges and only 2 percent of PPS payments. Urban hospitals with 500 or more beds represent only 4 percent of all PPS hospitals and 15 percent of PPS discharges, but they account for 21 percent of PPS payments.

Variations in the share of PPS payments reflect a combination of differences in Medicare discharge volume and in other factors that affect each hospital's average payment per discharge, including those identified above. Among these are the level of local wage rates and the mix of cases treated. Other factors that trigger additional payments under PPS are the occurrence of outlier cases, the operation of a graduate medical education program, and the treatment of indigent patients. Congress incorporated these factors into the payment system to ensure that PPS payments would compensate hospitals fairly for appropriate differences in the cost of treating Medicare patients. Congress also included the adjustments for the operation of a graduate education program and the treatment of a disproportionate share of low-income patients to fulfill the broader policy objectives of ensuring access.

Outlier Payments—Outlier payments are intended to protect hospitals, in part, from the risk of financial losses due to cases with exceptionally long stays or high costs. They are also designed to mitigate any incentive to avoid or inappropriately treat patients who are likely to become unusually costly. In fiscal year 1992, payments for outliers are expected to account for about 4.7 percent of total PPS payments, or about $2.6 billion (see Table 2-2).

Outlier payments are funded by a 5.6 percent reduction in the DRG rates of urban hospitals and a 2.1 percent reduction in the DRG rates of rural hospitals. These reduction factors represent a projection by the Health Care Financing Administration (HCFA) of the approximate shares of total DRG payments attributable to outlier payments in urban and rural hospitals, respectively, in fiscal year 1992. Outlier payments, however, are made according to the actual incidence of outlier cases, regardless of where they occur.[4]

Outlier payments are not evenly distributed across hospital groups, because some hospitals are more likely to treat cases with exceptionally long or costly stays. Urban hospitals receive 94 percent

Table 2-1. Distribution of PPS Hospitals and Discharges and Estimated Fiscal Year 1992 PPS Payments, by Hospital Group

Hospital Group	Number of Hospitals	PPS Hospitals	PPS Discharges	PPS Payments			
				Total	IME	DSH	Outlier
All hospitals	5,399	100%	100%	100%	100%	100%	100%
Urban	2,881	53	78	85	98	96	94
Rural	2,518	47	22	15	2	4	6
Large urban	1,551	29	43	51	72	60	60
Other urban	1,330	25	35	34	26	35	34
Rural referral	256	5	7	6	2	2	4
Sole community	438	8	2	2	*	*	*
Other rural	1,824	34	12	8	*	2	2
Major teaching	228	4	9	16	60	34	21
Other teaching	955	18	35	38	40	36	42
Non-teaching	4,216	78	56	46	0	29	36
Disproportionate share:							
Large urban	553	10	15	21	43	59	28
Other urban	585	11	18	19	20	37	20
Rural	335	6	4	3	*	4	2
Non-disproportionate share	3,926	73	63	57	37	0	50
Payment adjustments:							
IME and DSH	597	11	22	29	63	71	37
IME only	586	11	23	25	37	0	26
DSH only	876	16	15	14	0	29	12
No IME or DSH	3,340	62	41	32	0	0	24
Urban <100 beds	658	12	4	3	*	1	2
Urban 100-199 beds	789	15	13	12	4	14	10
Urban 200-299 beds	599	11	18	19	11	19	18
Urban 300-399 beds	376	7	15	16	14	19	18
Urban 400-499 beds	225	4	12	14	20	16	17
Urban 500+ beds	234	4	15	21	48	28	29
Rural <50 beds	1,130	21	3	2	*	*	*
Rural 50-99 beds	811	15	6	4	*	*	1
Rural 100-149 beds	308	6	5	3	*	1	1
Rural 150-199 beds	134	2	3	2	*	1	1
Rural 200+ beds	135	3	5	4	1	2	3
New England	233	4	6	6	10	3	9
Middle Atlantic	559	10	17	20	32	26	34
South Atlantic	765	14	16	15	10	16	15
East North Central	831	15	18	17	21	12	12
East South Central	469	9	8	7	3	8	5
West North Central	753	14	8	7	7	3	5
West South Central	767	14	11	10	5	12	9
Mountain	358	7	4	4	3	2	3
Pacific	664	12	11	13	9	18	9
Voluntary	3,072	57	73	75	79	66	79
Proprietary	795	15	12	11	2	9	10
Urban government	411	8	8	10	18	23	10
Rural government	1,100	20	7	4	*	2	1

Note: PPS payments estimated using PPS rules in effect as of January 1, 1992. Excludes hospitals in Maryland. Columns may not add to 100 due to rounding. DSH = disproportionate share payments. IME = indirect medical education payments.

* Less than 0.05 percent.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1990 MedPAR file data from the Health Care Financing Administration.

Table 2-2. Distribution of Estimated Fiscal Year 1992 PPS Payments, by Payment Type and Hospital Group (In Percent)

Hospital Group	PPS Payments			
	Basic DRG	IME	DSH	Outlier
All hospitals	85.6%	5.7%	4.0%	4.7%
Urban	83.7	6.5	4.5	5.2
Rural	96.2	0.7	1.1	2.0
Large urban	81.8	8.0	4.8	5.5
Other urban	86.7	4.4	4.2	4.7
Rural referral	93.7	1.7	1.7	3.0
Sole community	98.6	*	0.6	0.8
Other rural	97.7	0.1	0.8	1.4
Major teaching	63.6	21.4	8.7	6.3
Other teaching	85.0	6.0	3.9	5.2
Non-teaching	93.7	0.0	2.6	3.7
Disproportionate share:				
Large urban	71.4	11.4	11.1	6.2
Other urban	80.9	6.0	8.0	5.1
Rural	90.0	0.7	6.3	3.0
Non-disproportionate share	92.2	3.6	0.0	4.2
Payment adjustments:				
IME and DSH	72.0	12.3	9.7	6.0
IME only	86.6	8.4	0.0	5.0
DSH only	86.9	0.0	8.7	4.3
No IME or DSH	96.5	0.0	0.0	3.5
Urban <100 beds	94.9	0.8	0.9	3.3
Urban 100-199 beds	89.9	1.8	4.6	3.7
Urban 200-299 beds	87.9	3.4	4.1	4.6
Urban 300-399 beds	85.2	5.0	4.6	5.2
Urban 400-499 beds	81.3	8.3	4.6	5.8
Urban 500+ beds	75.1	13.0	5.3	6.5
Rural <50 beds	98.7	*	0.5	0.8
Rural 50-99 beds	98.3	0.5	0.4	0.9
Rural 100-149 beds	97.0	0.1	1.1	1.8
Rural 150-199 beds	95.7	0.5	1.4	2.4
Rural 200+ beds	92.5	1.8	2.1	3.6
New England	81.8	9.4	2.2	6.6
Middle Atlantic	77.7	9.2	5.2	7.9
South Atlantic	87.3	3.8	4.3	4.5
East North Central	87.2	6.7	2.8	3.3
East South Central	88.9	2.7	4.6	3.8
West North Central	90.1	5.2	1.7	3.0
West South Central	88.1	2.9	4.9	4.2
Mountain	91.4	3.4	1.7	3.5
Pacific	87.2	3.9	5.6	3.4
Voluntary	85.6	5.9	3.5	4.9
Proprietary	90.9	1.2	3.5	4.3
Urban government	74.3	10.9	9.9	4.9
Rural government	96.4	0.5	1.6	1.4

Note: PPS payments estimated using PPS rules in effect as of January 1, 1992. Excludes hospitals in Maryland. Columns may not add to 100 due to rounding. DSH = disproportionate share payments. IME = indirect medical education payments.

* Less than 0.05 percent.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1990 MedPAR file data from the Health Care Financing Administration.

of all outlier payments and rural hospitals only 6 percent. Similarly, while teaching hospitals account for 44 percent of PPS discharges, they receive 63 percent of outlier payments. Hospitals in the Middle Atlantic region, which have about 17 percent of all PPS discharges, receive 34 percent of all outlier payments.

As with other elements of PPS payment, the uneven distribution of outlier payments is not necessarily an indication that the outlier policy is inequitable. Certain groups of hospitals treat a more diverse mix of patients and thus face a greater risk that some of their patients will require an extraordinary amount of resources. Therefore, it is appropriate that some hospital groups receive a greater share of outlier payments than others. In fact, hospitals with a high proportion of outlier payments have been shown to be more likely to incur PPS losses. (See Chapter 3.)

Indirect Medical Education Payments—In fiscal year 1992, indirect medical education (IME) payments are expected to account for 5.7 percent of all PPS payments, or about $3.1 billion. The IME adjustment is intended to recognize hospitals' indirect costs of operating approved graduate medical education programs. Teaching hospitals are thought to offer a wider range of services and technologies, treat patients who are more severely ill, and provide more diagnostic and therapeutic services to given types of patients than other hospitals. Therefore, they tend to use a greater volume and more expensive mix of services per case.

PPS accounts for the indirect costs of teaching by applying a hospital-specific percentage adjustment to each teaching hospital's total DRG payments, which consist of basic DRG payments plus additional payments for outlier cases. The size of a hospital's IME adjustment varies according to the intensity of its graduate medical education activities (which is defined as the ratio of residents per bed).

IME payments are distributed unevenly across geographic areas. Urban hospitals receive 98 percent of IME payments, and teaching hospitals in the Middle Atlantic and East North Central regions receive more than half of all IME payments.

Disproportionate Share Payments—In fiscal year 1992, disproportionate share (DSH) payments are expected to account for 4.0 percent of all PPS payments, or about $2.2 billion. The DSH adjustment is intended to compensate hospitals that treat large proportions of low-income patients. Such hospitals are thought to have higher costs than otherwise similar hospitals for a variety of reasons, including their location and the characteristics of the patients they treat.

DSH payments are also distributed unevenly across geographic areas. Urban hospitals receive 96 percent of DSH payments, with DSH payments going predominantly to hospitals in the Middle Atlantic, Pacific, and South Atlantic regions (26 percent, 18 percent, and 16 percent, respectively).

Overlap of Hospitals Receiving Indirect Medical Education and Disproportionate Share Payments—There is substantial overlap between the hospitals that provide graduate medical education and those that furnish care to the poor. Teaching hospitals receive about 70 percent of all DSH payments, and disproportionate share hospitals receive about 63 percent of all IME payments. As a result, IME and DSH payments are a major source of revenue for some hospitals but of negligible importance for others.

In general, larger hospitals and teaching hospitals receive more of their PPS revenues from IME and DSH payments than smaller or non-teaching hospitals. Urban hospitals with 500 or more beds, for example, get 18.3 percent of their total PPS payments from these adjustments, compared with only 1.7 percent for urban hospitals with fewer than 100 beds. Major teaching hospitals (those with a ratio of residents to beds greater than 0.25) receive 21.4 percent of their PPS payments from the IME adjustment and 8.7 percent of their payments from the DSH adjustment. Basic DRG payments account for only 63.6 percent of total PPS payments for these hospitals. By contrast, rural hospitals with fewer than 50 beds get almost no IME and DSH payments. These hospitals depend on basic DRG payments for 98.7 percent of their total PPS revenues.

Effects of Payment Policy and Other Changes

Before the beginning of prospective payment in fiscal year 1984, hospitals were paid on the basis of

the costs they actually incurred in providing services to Medicare beneficiaries. Under this method, payments to hospitals were unevenly distributed because of differences in hospital characteristics and costliness. Teaching hospitals, for instance, have historically received a large share of payments because they generally are large hospitals with a high volume of Medicare discharges and high costs per case.

By paying hospitals on the basis of a fixed payment rate for each DRG, PPS has removed the direct connection between the costs of the individual hospital and its Medicare payments. This connection has been replaced with adjustments designed to recognize the impact of certain factors that affect a hospital's cost but are beyond its control, such as local market conditions and the mix of patients it treats.

As noted later in this chapter, the distribution of Medicare payments among hospitals changed substantially in the first year of PPS. Changes in hospital behavior and other factors also affected the level and distribution of Medicare operating costs per case. As a result, the implementation of PPS produced large disparities in financial performance among hospitals.

Congress responded by enacting a series of policy changes that were intended to mitigate perceived inequities in payments under the initial design of PPS. In fiscal year 1986, for example, the IME adjustment was reduced and the DSH adjustment was established. Similarly, Congress has mandated separate update factors for rural hospitals, hospitals located in large urban areas, and other urban hospitals each year beginning in fiscal year 1988. These changes in policy have affected the level and distribution of PPS payments among hospitals, generally as Congress intended.

Other changes in the distribution of payments have occurred when specific elements of the payment system have been updated to reflect new data. Elements of PPS that are subject to periodic updating include the area wage index, the DRG classification system and weights, and the outlier thresholds.

With Medicare payments no longer tied to each hospital's actual costs, hospitals are more vulnerable to the effects of payment policy decisions. The following discussion focuses on the impact that policy changes adopted after the first year of PPS had on PPS payments per discharge. This impact is measured relative to the policy in effect during the first PPS year.[5]

Changes in payments are attributable both to policy decisions and to other factors that are not directly affected by these decisions. Other significant factors include changes in the distribution of Medicare discharges among hospital groups and increases in the complexity and costliness of the mix of Medicare cases admitted for care (as measured by the Medicare case-mix index, or CMI).

Policy Changes in Recent Years—The effects on per-case payments of policy changes implemented in fiscal years 1990, 1991, and 1992—particularly changes enacted in the Omnibus Budget Reconciliation Acts (OBRA) of 1989 and 1990—have been large relative to the effects of policy changes in earlier years (see Table 2-3).[6]

Important provisions in OBRA 1989 and 1990 included different updates for rural and urban hospitals, as well as expansions in both the number of rural hospitals receiving the DSH adjustment and the size of the adjustment for many urban hospitals.

A major change was also made in payments for sole community hospitals (SCHs), which are geographically isolated hospitals that are considered to be the sole source of inpatient care for their community. These hospitals now receive payments determined by their 1982 or 1987 base-year costs or the PPS rate, whichever is greatest. Small rural Medicare-dependent hospitals (that is, hospitals with a large share of Medicare patients) also are provided with this option, although for a limited time.

In addition, the update of the hospital wage index for fiscal year 1991 had a substantial effect on per-case payments for some hospitals. Finally, for fiscal year 1992, almost 1,000 hospitals were reclassified for payment purposes by the Medicare Geographic Classification Review Board. Most of these were rural hospitals, which received higher wage indexes by being reclassified to adjacent urban labor market areas.

The increases in per-case payments for fiscal years 1990, 1991, and 1992 are also strongly

Table 2-3. Effects of PPS Update Factors and Other Payment Policy Changes on Per-Case PPS Payments, by Hospital Group (In Percent)

Hospital Group	Fiscal Year					Total PPS Policy Effect	Cumulative Increase in Case-Mix Index*	Total Case Mix and Policy Effect
	1984-1987	1987-1989	1990	1991	1992			
All hospitals	5.5%	4.5%	5.2%	4.5%	3.1%	24.9%	26.0%	57.4%
Urban	4.2	3.5	4.4	4.5	2.2	20.3	27.8	53.7
Rural	7.6	8.5	9.2	4.3	7.6	42.9	17.4	67.8
Large urban	4.3	3.6	4.3	4.8	2.3	20.8	27.4	53.9
Other urban	4.3	3.4	4.6	4.0	2.2	19.8	28.3	53.7
Rural referral	3.8	3.2	6.3	4.3	8.6	29.0	23.6	59.4
Sole community	9.0	8.3	15.1	6.0	5.1	51.4	13.5	71.8
Small rural Medicare-dependent	8.6	10.0	15.4	3.6	6.3	51.7	9.3	65.8
Other rural	8.3	11.8	8.7	4.0	7.6	47.3	14.2	68.1
Major teaching	-4.6	3.8	4.8	6.5	3.0	13.9	31.0	49.2
Other teaching	4.1	3.6	4.5	3.9	2.3	19.7	28.7	54.0
Non-teaching	7.7	5.4	5.6	4.3	3.8	29.7	22.8	59.3
Disproportionate share:								
Large urban	5.8	3.6	6.1	6.6	2.1	26.5	29.1	63.3
Other urban	5.6	3.1	5.4	4.8	2.8	23.5	28.6	58.8
Rural	7.2	7.4	11.5	5.2	10.4	49.0	19.6	78.2
Non-disproportionate share	5.2	5.1	4.7	3.6	3.3	23.7	24.7	54.3
Payment adjustments:								
IME and DSH	3.3	3.3	5.6	5.7	2.5	22.0	30.6	59.4
IME only	1.5	3.7	3.6	3.4	2.5	15.6	27.9	47.9
DSH only	9.6	4.3	6.3	5.7	3.8	33.3	23.9	65.2
No IME or DSH	7.0	5.8	5.4	3.7	3.8	28.3	22.4	57.1
Urban < 100 beds	5.2	3.5	3.9	3.5	2.3	19.6	19.3	42.7
Urban 100-199 beds	6.7	3.3	4.0	5.0	2.0	22.7	23.0	50.8
Urban 200-299 beds	5.7	3.6	4.0	4.2	2.2	21.2	26.5	53.3
Urban 300-399 beds	4.5	3.7	5.0	4.6	2.0	21.4	27.4	54.6
Urban 400-499 beds	3.4	3.3	4.5	4.1	2.4	18.9	30.2	54.8
Urban 500+ beds	0.0	3.3	4.4	4.8	2.6	15.9	31.8	52.8
Rural < 50 beds	9.6	10.4	12.3	4.3	5.3	49.3	7.2	60.1
Rural 50-99 beds	8.3	9.8	10.4	4.3	6.6	46.1	13.7	66.2
Rural 100-149 beds	7.4	8.9	8.6	4.1	8.6	43.5	18.9	70.6
Rural 150-199 beds	5.6	7.0	7.8	3.7	8.2	36.6	19.8	63.6
Rural 200+ beds	3.7	5.1	6.8	4.9	8.9	32.9	23.6	64.3
New England	6.4	6.3	4.5	9.6	3.1	33.4	20.6	60.9
Middle Atlantic	-1.0	4.3	5.4	5.2	2.7	17.6	25.6	47.7
South Atlantic	4.6	4.1	5.3	6.5	3.5	26.2	27.5	60.9
East North Central	3.9	4.3	4.2	2.6	3.3	19.6	24.6	49.0
East South Central	4.4	4.5	6.5	3.8	3.8	25.2	26.0	57.8
West North Central	10.6	4.9	6.0	0.8	3.8	28.5	26.6	62.7
West South Central	6.0	4.3	6.8	3.4	3.6	26.5	28.5	62.5
Mountain	3.6	5.0	5.3	4.6	2.8	23.1	24.1	52.9
Pacific	9.2	5.0	4.0	4.4	2.3	27.2	25.6	59.8
Voluntary	4.8	4.5	4.8	4.2	3.0	23.3	25.7	55.0
Proprietary	5.8	3.3	5.1	4.9	3.0	24.0	32.8	64.7
Urban government	4.3	3.8	5.5	6.0	1.9	23.2	25.3	54.5
Rural government	8.2	8.8	10.0	4.3	6.9	44.4	14.5	65.3

Note: Figures are not estimates of actual changes in fiscal year PPS hospital payments. They are meant to isolate the effects of changes in PPS rules on PPS payment rates, holding all other factors constant. Payments for each year are estimated based on the PPS rules in effect on the last day of the fiscal year. The effect of change in case mix is reflected only in the last two columns. Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with fiscal year 1987 and New Jersey beginning with fiscal year 1989. DSH = disproportionate share payments. IME = indirect medical education payments.

* The effect of the change in case mix for fiscal years 1991 and 1992 by group is estimated from the relative average annual change by group for fiscal years 1985 through 1990.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1990 MedPAR file data from the Health Care Financing Administration.

influenced by the differential updates granted to rural and urban hospitals in those years. Effective January 1, 1990, the PPS update factor for rural hospitals was 9.72 percent, with an additional 4.5 percent effective on January 1, 1991, and 3.8 percent effective on October 1, 1991. The comparable updates for hospitals in large urban areas were 5.62 percent, 3.2 percent, and 2.8 percent; for other urban hospitals, the update factors were 4.97 percent, 3.2 percent, and 2.8 percent.[7]

The differential PPS rate updates and other recent policy changes have resulted in large increases in the per-case payment rates for rural hospitals, particularly sole community hospitals and rural disproportionate share hospitals.[8] Small rural hospitals (those with fewer than 100 beds) and rural government hospitals also appear to have benefited substantially from these policy changes.

Cumulative Effects of Payment Policy Changes—The cumulative effects of payment policy decisions made since the first year of PPS have increased per-case PPS payments by 24.9 percent. However, rural hospitals have benefited from these decisions substantially more than urban hospitals, with a cumulative policy-related increase that is more than twice as high (42.9 percent compared with 20.3 percent). Small rural hospitals have been especially helped by PPS policy changes. Rural hospitals with fewer than 50 beds have experienced a 49.3 percent increase in per-case payments, with much of this increase due to geographic reclassification. Both small and large hospitals in urban areas have received relatively little help from PPS policy changes.

Among groups with special payment status, sole community hospitals and small rural Medicare-dependent hospitals have benefited substantially from PPS policy changes. Each group has experienced a more than 50 percent increase in per-case payments. This is primarily due to the OBRA 1989 provisions described above.

The IME adjustment was reduced in fiscal year 1986, largely in reaction to the extremely high level of payments received by teaching hospitals in the first year of PPS. This led to a decrease in per-case payment rates for major teaching hospitals in that year and a relatively small cumulative increase in payments.

Historically, much of the policy debate each year focuses on the size of the PPS update factor, although other payment policy decisions attract attention as well. However, the rate of increase in the CMI is about equally important in determining the overall increase in per-case PPS payments. In addition, the distribution of case-mix change is often quite different from the pattern of payment policy effects. Rural hospitals, for example, had a relatively large increase in payments per case due to policy effects, but their increase in payments due to CMI change was well below average. Consequently, some of the effect of policy changes that were intended to help rural hospitals has been offset by CMI change. Due in large part to the changes made in OBRA 1989 and OBRA 1990, however, the combined policy-related and CMI-related increase in per-case payments for rural hospitals has been larger than that for urban hospitals (67.8 percent, compared with 53.7 percent).

Case-Mix Index Change—The CMI is the average DRG weight for all cases paid under PPS. It measures the relative costliness of the patients treated in each hospital or group of hospitals. However, an increase in the CMI may result from either changes in patient resource use or refinement of medical record documentation and coding practices. Changes in patient resource use may be due to the treatment of patients who are more severely ill or the provision of more complex services. These reflect real changes in the costliness of treatment. Refinement of medical record documentation and coding practices, on the other hand, may result in higher payment but does not reflect changes in treatment costs.

The CMI has increased each year since the implementation of PPS (see Table 2-4). The CMI for all hospitals was 1.053 in 1981 (pre-PPS) and had increased to 1.346 by fiscal year 1990. Between fiscal years 1984 and 1990, the CMI increased at an average annual rate of 3.0 percent. From 1989 to 1990, the increase was 2.2 percent.[9]

The largest single-year increase in the CMI occurred in the first year of PPS. This increase coincided with the introduction of financial incentives to improve coding completeness and accuracy, and with major shifts of patients to outpatient settings. Another large increase occurred in fiscal year 1988, when changes in the structure of several

Table 2-4. Changes in the Medicare Case-Mix Index Under PPS, by Hospital Group, 1981-1990

Hospital Group	Case-Mix Index				Average Annual Percent Change		
	1981*	1984	1989	1990	1981*-1984	1984-1989	1989-1990
All hospitals	1.053	1.129	1.317	1.346	2.6%	2.8%	2.2%
Urban	1.077	1.164	1.361	1.395	2.9	3.2	2.5
Rural	0.981	1.033	1.160	1.173	1.9	2.1	1.1
Large urban	1.084	1.170	1.361	1.395	2.8	2.8	2.5
Other urban	1.069	1.158	1.361	1.395	3.0	2.9	2.5
Rural referral	1.036	1.097	1.269	1.292	2.1	2.6	1.8
Sole community	0.967	1.018	1.119	1.128	1.9	1.5	0.8
Other rural	0.959	1.008	1.107	1.114	1.8	1.5	0.7
Major teaching	1.159	1.277	1.498	1.548	3.6	3.0	3.3
Other teaching	1.090	1.190	1.388	1.427	3.2	2.9	2.8
Non-teaching	1.015	1.079	1.244	1.262	2.2	2.4	1.5
Disproportionate share:							
Large urban	1.098	1.191	1.381	1.420	3.0	2.8	2.8
Other urban	1.070	1.165	1.379	1.415	3.1	3.1	2.6
Rural	0.971	1.027	1.164	1.183	2.1	2.2	1.7
Non-disproportionate share	1.042	1.114	1.293	1.320	2.5	2.7	2.1
Payment adjustments:							
IME and DSH	1.108	1.214	1.428	1.472	3.4	3.1	3.1
IME only	1.100	1.196	1.395	1.433	3.1	2.9	2.7
DSH only	1.019	1.088	1.257	1.280	2.4	2.5	1.9
No IME or DSH	1.014	1.076	1.238	1.256	2.2	2.4	1.5
Urban <100 beds	0.981	1.032	1.170	1.178	1.9	2.0	0.7
Urban 100-199 beds	1.028	1.105	1.266	1.284	2.7	2.3	1.5
Urban 200-299 beds	1.064	1.139	1.325	1.355	2.5	2.7	2.3
Urban 300-399 beds	1.087	1.176	1.369	1.402	2.9	2.8	2.4
Urban 400-499 beds	1.107	1.202	1.414	1.454	3.0	3.0	2.8
Urban 500+ beds	1.138	1.266	1.495	1.546	4.0	3.2	3.4
Rural <50 beds	0.940	0.980	1.044	1.041	1.5	0.8	-0.3
Rural 50-99 beds	0.961	1.015	1.115	1.123	2.0	1.5	0.7
Rural 100-149 beds	0.990	1.046	1.181	1.199	2.0	2.1	1.6
Rural 150-199 beds	1.005	1.054	1.194	1.213	1.7	2.2	1.6
Rural 200+ beds	1.038	1.098	1.271	1.293	2.1	2.5	1.7
New England	1.089	1.167	1.306	1.335	2.5	2.1	2.2
Middle Atlantic	1.089	1.133	1.300	1.332	1.5	2.5	2.5
South Atlantic	1.045	1.128	1.335	1.363	2.8	3.0	2.1
East North Central	1.062	1.126	1.306	1.336	2.2	2.7	2.3
East South Central	1.014	1.074	1.252	1.287	2.1	2.8	2.8
West North Central	1.020	1.129	1.321	1.355	3.8	2.9	2.6
West South Central	0.988	1.102	1.316	1.340	4.1	3.1	1.8
Mountain	1.060	1.154	1.337	1.371	3.1	2.7	2.5
Pacific	1.098	1.181	1.384	1.411	2.7	2.8	2.0
Voluntary	1.067	1.149	1.333	1.364	2.7	2.7	2.4
Proprietary	1.015	1.084	1.315	1.343	2.4	3.4	2.1
Urban government	1.074	1.159	1.342	1.375	2.8	2.7	2.4
Rural government	0.961	1.016	1.124	1.132	2.0	1.6	0.7

Note: Case-mix indexes presented in this table are case-weighted averages for each hospital group. They are based on DRG assignments made by the GROUPER software in use at the time of discharge for each Medicare case. Excludes hospitals in Maryland; includes hospitals in Massachusetts, New York, and New Jersey beginning with fiscal year 1989. DSH = disproportionate share payments. IME = indirect medical education payments.

* Data for 1981 correspond to calendar year. All other years shown are Federal fiscal years.

SOURCE: ProPAC analysis of MedPAR file data from the Health Care Financing Administration.

DRGs provided hospitals with new incentives for more complete coding.

Historically, the CMI for urban hospitals has been higher than for rural hospitals. In addition, the CMI for urban hospitals has been increasing more rapidly. As a result, the difference between the CMIs of the two groups has been widening over time. In fiscal year 1990, the difference between the urban and rural CMIs was 18.9 percent, compared with a 12.7 percent difference in fiscal year 1984.

Within the urban and rural hospital groups, the CMI and the rate of growth in the CMI increase with hospital size. Similarly, major teaching hospitals have had higher and slightly more rapidly increasing CMIs than other teaching hospitals; all teaching hospitals as a group have had higher and faster-growing CMIs than non-teaching hospitals.

These differences in the rate of CMI change raise an important issue related to PPS payment policy. As shown above, the distribution of payments may be substantially affected by the pattern of CMI changes. However, a significant portion of CMI change may be due to changes in coding practices, rather than to real changes in patient resource requirements. Information is not available about the relative importance of these factors across hospital groups. Nevertheless, to the extent that different groups of hospitals exhibit different coding behavior, the distribution of PPS payments may be significantly affected by factors unrelated to patient resource requirements. Furthermore, the effect of this change may be contrary to that desired by policy makers.

Other Mandated Changes—ProPAC has estimated the effects of three additional changes in payment policy that have been mandated by law. The first of these is the expiration of the special provision in OBRA 1989 for small rural Medicare-dependent hospitals. The second is the increase in DSH payments for urban hospitals with at least 100 beds and for rural hospitals with at least 500 beds. The third is the elimination of the differential between the standardized payment amounts for rural and other urban hospitals.

Small rural Medicare-dependent hospitals are rural hospitals with fewer than 100 beds and a Medicare share of inpatient discharges or days of at least 60 percent. These hospitals can be paid based on the highest of three rates: a rate based on their 1982 costs per discharge, updated to the current year; a rate based on their 1987 costs per discharge; or the Federal PPS rate. This provision expires with hospital cost reporting periods ending March 31, 1993, or later.

The group of hospitals that qualify under this provision has received a substantial aggregate increase in payments.[10] The expiration of the provision is estimated to reduce payments for these hospitals by 9.6 percent (see Table 2-5). This provision has no impact on hospitals other than those identified as small rural Medicare-dependent facilities.

OBRA 1990 increased the DSH adjustment for urban hospitals with at least 100 beds and for rural hospitals with at least 500 beds as of January 1, 1991. The legislation provided for additional increases in the adjustment for these hospitals effective October 1, 1993, and October 1, 1994. These changes have a small effect on overall PPS payments, resulting in an increase of 0.4 percent. However, they have a much greater effect on the group of hospitals to which they are targeted. Payments would increase by 1.3 percent for disproportionate share hospitals in large urban areas and by 0.8 percent for disproportionate share hospitals in other urban areas.

A mandated change with more general implications is the elimination of the differential between the rural and other urban standardized payment amounts under PPS, which is scheduled to be complete by fiscal year 1995. If this differential were eliminated under current rules, it would raise payments to rural hospitals by 2.2 percent and lower payments to urban hospitals by 0.4 percent.

The net effect of these three changes would be to help rural hospitals, except for rural referral centers and hospitals now receiving additional payments under the small rural Medicare-dependent hospital provision. Payments to most urban hospitals would be reduced to finance the increase in payments for rural hospitals. However, urban hospitals that have at least 100 beds and treat a disproportionate share of low-income patients would experience an increase in payments.

Table 2-5. Estimated Effect of Mandated Policy Changes on Fiscal Year 1992 PPS Payments Per Discharge (In Percent)

Hospital Group	Expiration of Provision for Special Payment for Small Rural Medicare-Dependent Hospitals	Elimination of Differential Between Rural and Other Urban Standardized Payment Amounts	Increase in Payments to Disproportionate Share Hospitals	Combined Effect
All hospitals	-0.1%	0.0%	0.4%	0.3%
Urban	0.0	-0.4	0.5	0.1
Rural	-0.7	2.2	*	1.5
Large urban	0.0	-0.4	0.6	0.2
Other urban	0.0	-0.4	0.4	*
Rural referral	0.0	-0.4	0.1	-0.3
Sole community	0.0	2.0	0.0	2.0
Small rural Medicare-dependent	-9.6	5.7	0.0	-4.5
Other rural	0.0	4.1	*	4.1
Major teaching	0.0	-0.4	1.1	0.7
Other teaching	*	-0.4	0.4	*
Non-teaching	-0.2	0.4	0.2	0.4
Disproportionate share:				
Large urban	0.0	-0.4	1.3	0.9
Other urban	0.0	-0.4	0.8	0.4
Rural	-0.1	1.7	0.2	1.9
Non-disproportionate share	-0.2	0.2	0.0	*
Payment adjustments:				
IME and DSH	0.0	-0.4	1.1	0.7
IME only	*	-0.4	0.0	-0.4
DSH only	*	*	0.8	0.8
No IME or DSH	-0.3	0.6	0.0	0.3
Urban < 100 beds	0.0	-0.4	0.0	-0.4
Urban 100-199 beds	0.0	-0.4	0.5	0.1
Urban 200-299 beds	0.0	-0.4	0.5	0.1
Urban 300-399 beds	0.0	-0.4	0.5	0.1
Urban 400-499 beds	0.0	-0.4	0.5	0.1
Urban 500+ beds	0.0	-0.4	0.6	0.2
Rural < 50 beds	-2.1	4.4	0.0	2.2
Rural 50-99 beds	-1.7	3.9	0.0	2.2
Rural 100-149 beds	0.0	2.3	0.0	2.3
Rural 150-199 beds	0.0	1.1	0.0	1.1
Rural 200+ beds	0.0	-0.1	0.1	*
New England	*	-0.3	0.2	-0.1
Middle Atlantic	-0.1	-0.3	0.6	0.2
South Atlantic	*	0.1	0.4	0.5
East North Central	-0.1	*	0.3	0.2
East South Central	-0.1	0.6	0.4	0.9
West North Central	-0.4	0.5	0.1	0.2
West South Central	-0.3	0.2	0.5	0.5
Mountain	*	0.1	0.2	0.3
Pacific	*	-0.2	0.7	0.4
Voluntary	-0.1	-0.1	0.4	0.2
Proprietary	-0.1	*	0.4	0.4
Urban government	0.0	-0.4	1.2	0.8
Rural government	-1.1	3.0	0.1	2.0

Note: Excludes hospitals in Maryland. Columns may not add to 100 due to rounding. DSH = disproportionate share payments. IME = indirect medical education payments.

* Less than 0.05 percent.

SOURCE: ProPAC estimates based on ProPAC PPS payment model and fiscal year 1990 MedPAR file data from the Health Care Financing Administration.

Trends in PPS Costs and Payments

One of the major objectives of PPS is to encourage hospitals to contain the cost of providing care to Medicare patients. The pattern of growth in operating costs and payments over the first seven years of PPS provides some information about how effectively this objective has been met.

PPS Operating Costs—In the first year of PPS, total allowable Medicare operating costs were almost 5 percent less than they had been in the previous year (see Table 2-6).[11] This decrease was due principally to sharp declines in Medicare inpatient admissions and average length of stay. Growth in PPS operating costs was held below 6 percent for the next two years, primarily because of continued reductions in Medicare admissions. In the fifth through seventh years of PPS, total PPS operating costs grew at an average annual rate of 11.2 percent.

After an increase of 1.9 percent in the first year and 10.5 percent in the second, operating costs per discharge grew at a fairly constant rate of 9.0 percent to 9.9 percent in the third through sixth years of PPS. In the seventh year, however, the increase was only 8.0 percent. It is too early to tell whether this represents a leveling off of hospital cost growth or a temporary slowing in the long-term trend. Nonetheless, the cumulative growth in operating costs per discharge under PPS was more than 75 percent by the seventh year, and was projected to reach 109 percent by the ninth year (see Figure 2-1). This increase far exceeded that in the PPS market basket index (an index of the cost of inputs used to produce care for Medicare patients), which was 46 percent through the ninth year of PPS.

The pattern of change in operating costs per discharge varies slightly across the different hospital groups (see Table 2-7). Rural hospitals had smaller than average cost per case increases in five of the first six years of PPS, but a larger than average increase in the seventh year. Again, it is difficult to tell whether this indicates a reversal of the previous trend or a one-year aberration. Sole community hospitals have consistently had smaller cost increases than other rural hospitals. Teaching hospitals—especially those in the major teaching category—generally had slower growth in costs per case than non-teaching hospitals in the first six years, but larger increases in the seventh year.

Of particular note is the 9.7 percent increase in costs per discharge for rural disproportionate share hospitals in the seventh year of PPS. As discussed above, OBRA 1989 substantially increased DSH payments for this group. This provision took effect during the seventh year, coinciding with a substantial cost increase for these hospitals.[12]

Table 2-6. Changes in PPS Operating Costs and Payments, First Seven Years of PPS (In Percent)

	PPS					
Year	Operating Costs	Payments	Operating Costs Per Discharge	Payments Per Discharge	Market Basket Index	Update Factor
TEFRA to PPS 1	-4.6%	11.0%	1.9%	18.5%	4.9%	4.7%
PPS 1 to PPS 2	4.3	4.0	10.5	10.3	3.9	4.5
PPS 2 to PPS 3	5.7	-0.5	9.6	3.2	3.1	0.5
PPS 3 to PPS 4	7.4	3.5	9.0	5.0	3.6	1.2
PPS 4 to PPS 5	10.8	6.8	9.9	6.0	4.8	1.5
PPS 5 to PPS 6	11.3	7.0	9.9	5.6	5.4	3.3
PPS 6 to PPS 7	11.4	8.3	8.0	5.0	4.5	4.7*

Note: Data on costs, payments, and discharges for each PPS year (TEFRA, PPS 1, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the TEFRA year includes data from each hospital's cost reporting period beginning during the year in which TEFRA was in effect (Federal fiscal year 1983). Data on the market basket index and the update factor are from the corresponding Federal fiscal year (1984 for PPS 1, etc.). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3 and New Jersey beginning with PPS 6. Data are based on cohorts of hospitals with cost reports available in each of two successive years. TEFRA = Tax Equity and Fiscal Responsibility Act of 1982.

* Adjusted for 1.22 percent across-the-board reduction in DRG weights.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Table 2-7. Changes in PPS Operating Costs Per Discharge, by Hospital Group, First Seven Years of PPS (In Percent)

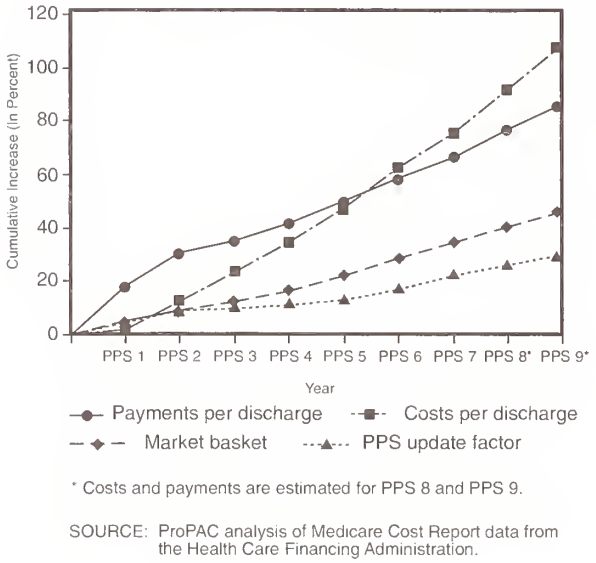
Hospital Group	Annual Percent Change			
	TEFRA to PPS 1	PPS 1 to PPS 2	PPS 2 to PPS 6*	PPS 6 to PPS 7
All hospitals	1.9%	10.5%	9.6%	8.0%
Urban	1.7	10.5	9.5	7.6
Rural	1.7	9.0	9.3	8.6
Large urban	0.6	10.2	9.2	6.8
Other urban	3.1	10.9	10.1	8.7
Rural referral	1.4	9.7	10.2	9.2
Sole community	1.8	8.5	8.5	7.9
Other rural	1.6	8.3	8.6	8.0
Major teaching	2.0	9.4	9.3	9.0
Other teaching	1.4	10.6	9.3	7.8
Non-teaching	2.0	10.3	9.9	7.8
Disproportionate share:				
Large urban	-0.9	10.3	9.2	7.3
Other urban	3.5	10.7	10.3	8.8
Rural	0.9	8.8	10.3	9.7
Non-disproportionate share	2.4	10.6	9.5	7.8
Payment adjustments:				
IME and DSH	1.0	10.5	9.4	8.2
IME only	2.1	10.5	9.2	8.0
DSH only	1.2	10.1	10.2	8.3
No IME or DSH	2.3	10.3	9.7	7.6
Urban <100 beds	0.5	11.4	9.6	4.3
Urban 100-199 beds	0.5	10.4	9.4	7.5
Urban 200-299 beds	1.1	10.4	9.4	6.9
Urban 300-399 beds	2.1	10.3	9.2	7.4
Urban 400-499 beds	2.8	9.2	9.6	7.5
Urban 500+ beds	2.1	11.7	9.8	9.8
Rural <50 beds	2.6	8.5	7.9	7.1
Rural 50-99 beds	1.2	8.8	8.3	7.6
Rural 100-149 beds	0.5	8.3	9.1	8.1
Rural 150-199 beds	2.0	9.4	9.5	7.3
Rural 200+ beds	1.5	8.8	10.7	10.8
Voluntary	1.9	10.2	9.4	7.7
Proprietary	0.6	11.0	10.9	9.3
Urban government	2.0	11.0	9.7	7.5
Rural government	2.3	10.0	8.8	8.7

Note: Data for each PPS year (TEFRA, PPS 1, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the TEFRA year includes data from each hospital's cost report beginning during the year in which TEFRA was in effect (Federal fiscal year 1983). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3 and New Jersey beginning with PPS 6. Data are based on cohorts of hospitals with cost reports available in each of two successive years. DSH = disproportionate share payments. IME = indirect medical education payments. TEFRA = Tax Equity and Fiscal Responsibility Act of 1982.

* Average of year-to-year changes.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Figure 2-1. Cumulative Increases in PPS Costs and Payments Per Discharge, First Nine Years of PPS (In Percent)



* Costs and payments are estimated for PPS 8 and PPS 9.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Other hospital groups with larger than average cost per case increases in the seventh year were rural referral centers, rural disproportionate share hospitals, urban hospitals with 500 or more beds, rural hospitals with 200 or more beds, and proprietary hospitals.

PPS Payments—Total PPS payments followed a different trend than cost increases. In the first year of PPS, payments grew by 11 percent. In the third year, however, total payments decreased, as admissions continued to decline and Congress and the Administration adjusted the payment system in response to the high Medicare surpluses of the first two years. (See the discussion of PPS margins below.) Since the fourth year of PPS, total payments have grown each year, although about three to four percentage points slower than the increase in costs.

Payments per discharge increased by 18.5 percent in the first year of PPS and 10.3 percent in the second year (see Table 2-8). In the third year, they grew by only 3.2 percent but have since accelerated. In the fourth through seventh years of PPS, the increases in payments per discharge have been between 5 percent and 6 percent. PPS payments per discharge have grown much more rapidly than the update factor in every year. This is due primarily to CMI increases, as discussed above. In the first nine years of PPS, the update factor has increased payment rates by a cumulative 30 percent. Total PPS payments per discharge, however, have risen almost three times more.

There has been considerably more variation across hospital groups in PPS payments per discharge than in costs per discharge. During the first year of PPS, urban hospitals had a substantially higher per-case payment increase than rural hospitals, 19.8 percent compared with 11.6 percent. More recently, however, rural hospitals have had larger increases in payments than urban hospitals. This reflects the payment policy changes discussed above.

The hospital groups with the largest increases in payments per case in the seventh year of PPS were sole community hospitals and rural disproportionate share hospitals, two of the groups benefiting most from the payment changes in OBRA 1989.

PPS Operating Margins

Data on the trend and distribution of PPS operating margins are presented below. The PPS margin compares PPS payments with Medicare inpatient operating costs. It provides a measure of the relationship between the costs of Medicare-covered services and how much is paid for them under prospective payment. Similar data on total hospital margins and the relationships between payments and costs for other payers are presented later in this chapter.

Trends in PPS Margins—Aggregate PPS operating margins have fallen sharply from the high levels observed during the first two years of PPS (see Table 2-9). These margins exceeded 14 percent in each of the first two years, reflecting the large increases in PPS payments per discharge in those years and the industry's initial success in restraining growth in operating costs per discharge. The PPS margin had fallen to 3.0 percent, however, by the fifth year of PPS. In the sixth year, the aggregate PPS margin fell below zero for the first time, to –1.0 percent. For the current (ninth) year, ProPAC estimates an aggregate PPS margin of –10.2 percent (see Figure 2-2).

Recently, the difference in PPS margins for urban and rural hospitals has begun to narrow.

Table 2-8. Changes in PPS Payments Per Discharge, by Hospital Group, First Seven Years of PPS (In Percent)

Hospital Group	Annual Percent Change			
	TEFRA to PPS 1	PPS 1 to PPS 2	PPS 2 to PPS 6*	PPS 6 to PPS 7
All hospitals	18.5%	10.3%	4.9%	5.0%
Urban	19.8	10.1	4.7	4.4
Rural	11.6	9.2	5.6	6.8
Large urban	19.3	8.9	4.3	4.2
Other urban	20.5	11.8	5.4	4.7
Rural referral	12.3	13.9	6.0	5.9
Sole community	11.5	6.7	5.1	10.3
Other rural	11.1	6.7	5.1	6.4
Major teaching	25.6	12.6	4.5	7.2
Other teaching	20.0	10.1	4.6	4.9
Non-teaching	16.0	9.4	5.3	4.5
Disproportionate share:				
Large urban	18.2	9.3	5.2	6.0
Other urban	21.3	12.0	6.0	5.1
Rural	11.9	9.5	6.7	8.6
Non-disproportionate share	18.2	10.0	4.5	4.5
Payment adjustments:				
IME and DSH	20.5	11.2	5.3	6.0
IME only	21.7	10.6	3.8	4.8
DSH only	16.3	9.3	6.1	5.4
No IME or DSH	15.8	9.4	4.9	4.2
Urban < 100 beds	16.8	10.5	4.6	0.3
Urban 100-199 beds	17.1	8.6	5.0	3.5
Urban 200-299 beds	18.3	8.9	4.5	4.6
Urban 300-399 beds	19.5	9.5	4.6	4.5
Urban 400-499 beds	20.5	10.8	4.9	4.1
Urban 500+ beds	24.3	12.2	4.5	6.2
Rural < 50 beds	11.5	6.9	5.4	6.0
Rural 50-99 beds	11.4	7.3	4.9	7.6
Rural 100-149 beds	10.5	7.0	5.5	7.0
Rural 150-199 beds	11.0	10.9	5.7	5.2
Rural 200+ beds	12.4	13.4	5.9	6.8
Voluntary	18.9	10.0	4.7	4.5
Proprietary	17.8	9.1	5.3	7.0
Urban government	19.9	12.2	5.6	5.6
Rural government	11.3	8.6	5.7	7.3

Note: Data for each PPS year (TEFRA, PPS 1, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the TEFRA year includes data from each hospital's cost report beginning during the year in which TEFRA was in effect (Federal fiscal year 1983). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3 and New Jersey beginning with PPS 6. Data are based on cohorts of hospitals with cost reports available in each of two successive years. DSH = disproportionate share payments. IME = indirect medical education payments. TEFRA = Tax Equity and Fiscal Responsibility Act of 1982.

* Average of year-to-year changes.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Table 2-9. PPS Operating Margins, by Hospital Group, First Seven Years of PPS (In Percent)

Hospital Group	PPS 1	PPS 2	PPS 3	PPS 4	PPS 5	PPS 6	PPS 7
All hospitals	14.5%	14.3%	9.9%	6.7%	3.0%	-1.0%	-3.6%
Urban	15.8	15.4	11.0	7.7	3.7	-0.4	-3.2
Rural	8.4	8.7	3.2	0.8	-0.7	-4.2	-5.6
Large urban	16.4	15.3	11.2	7.6	3.5	-0.2	-2.3
Other urban	15.0	15.4	10.8	7.7	3.9	-0.6	-4.4
Rural referral	9.9	13.2	7.9	4.6	2.3	-1.9	-5.2
Sole community	8.3	6.6	2.2	0.4	-1.6	-5.6	-3.9
Other rural	7.5	6.3	0.1	-2.1	-3.0	-5.7	-6.6
Major teaching	19.6	21.3	16.6	13.9	10.4	7.1	7.8
Other teaching	16.2	15.8	11.7	8.2	4.3	0.6	-2.0
Non-teaching	12.2	11.4	6.4	3.1	-0.0	-4.4	-7.7
Disproportionate share:							
Large urban	17.0	16.0	13.2	10.9	8.3	4.4	4.0
Other urban	15.2	15.8	12.0	9.5	6.0	1.9	-0.9
Rural	9.0	9.1	2.9	0.8	-1.2	-3.6	-4.6
Non-disproportionate share	13.9	13.5	8.3	4.5	0.4	-3.5	-6.7
Payment adjustments:							
IME and DSH	17.0	17.3	14.0	11.7	8.7	5.0	3.8
IME only	16.9	17.0	11.8	7.6	2.6	-0.8	-3.2
DSH only	13.0	12.1	8.1	5.6	2.9	-1.6	-3.9
No IME or DSH	11.8	11.2	5.7	2.1	-1.2	-5.5	-9.2
Urban <100 beds	13.7	12.7	6.9	4.0	0.7	-3.5	-5.9
Urban 100-199 beds	14.4	12.8	8.1	5.3	1.9	-2.7	-6.1
Urban 200-299 beds	15.2	14.2	9.7	6.0	2.1	-2.2	-5.1
Urban 300-399 beds	15.5	14.7	10.8	7.1	3.1	-0.7	-4.1
Urban 400-499 beds	15.9	17.0	13.4	9.9	6.1	2.0	-1.2
Urban 500+ beds	18.2	18.4	13.7	10.6	5.9	2.1	0.4
Rural <50 beds	6.2	5.3	-0.3	-0.9	-0.4	-2.3	-2.6
Rural 50-99 beds	8.6	7.5	1.6	-0.7	-2.2	-4.6	-4.6
Rural 100-149 beds	8.8	7.3	2.2	-0.2	-2.0	-6.0	-6.2
Rural 150-199 beds	8.6	9.8	4.7	2.8	1.7	-3.1	-5.9
Rural 200+ beds	9.5	13.2	7.2	3.2	0.4	-3.8	-7.7
Voluntary	15.0	14.9	10.6	7.3	3.4	-0.4	-3.0
Proprietary	14.6	12.8	8.0	4.4	0.2	-5.7	-7.7
Urban government	15.1	15.6	10.8	7.8	5.5	1.8	-2.4
Rural government	7.0	6.2	0.6	-2.2	-2.4	-5.0	-6.7

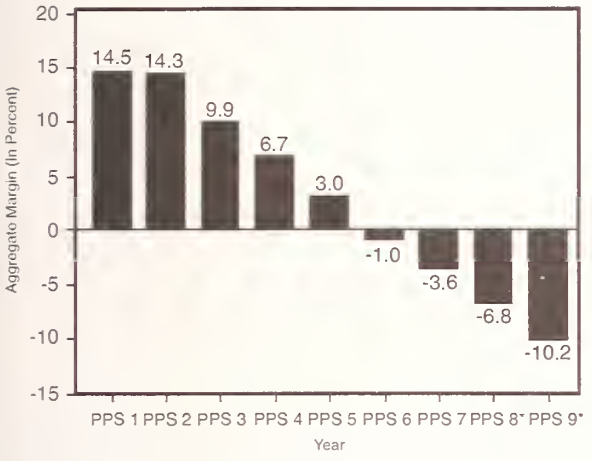
Note: Data for each PPS year (PPS 1, PPS 2 etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the PPS 1 year includes data from each hospital's cost report beginning during the first year of PPS (Federal fiscal year 1984). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3 and New Jersey beginning with PPS 6. DSH = disproportionate share payments. IME = indirect medical education payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

First-year PPS margins were 8.4 percent for rural hospitals and 15.8 percent for urban hospitals, a 7.4 percentage point spread. By the seventh year, however, the PPS margin for rural hospitals was –5.6 percent compared with –3.2 percent for urban hospitals, a difference of 2.4 percentage points.

Major teaching hospitals continue to have the highest PPS margins, and the differences between them and both other teaching hospitals and non-teaching hospitals have grown. The PPS margin for major teaching hospitals declined from 19.6 percent in the first year to 7.8 percent in the seventh year, whereas the margin for other teaching hospi-

Figure 2-2. Aggregate PPS Operating Margin, First Nine Years of PPS (In Percent)



* PPS margin estimated for PPS 8 and PPS 9.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

tals fell from 16.2 percent to –2.0 percent over the same period. The PPS margin for non-teaching hospitals, meanwhile, fell from 12.2 percent to –7.7 percent. Thus, the seventh-year margin for major teaching hospitals was 9.8 percentage points higher than for other teaching hospitals and 15.5 percentage points higher than for non-teaching hospitals. These differences were 3.4 percentage points and 7.4 percentage points, respectively, in the first year.

The DSH adjustment also appears to have substantially affected PPS margins, primarily for hospitals in large urban areas. Disproportionate share hospitals in large urban areas had an aggregate PPS margin of 4.0 percent in the seventh year, while other disproportionate share hospitals had a negative aggregate margin. Hospitals that do not receive DSH payments had an aggregate PPS margin of –6.7 percent.

The combined effect of the IME and DSH adjustments on PPS margins can readily be seen by comparing hospitals with and without these adjustments. Hospitals receiving both an IME and a DSH adjustment had an aggregate PPS margin of 3.8 percent in the seventh year of PPS. Most major teaching hospitals also get DSH payments, as described above. The aggregate PPS margin for hospitals receiving just one of these adjustments was –3.2 percent for IME only and –3.9 percent for DSH only, while hospitals that received neither adjustment had an aggregate margin of –9.2 percent. Payment adjustments and payment policy changes have clearly disadvantaged certain hospital groups relative to others.

For urban hospitals, there is a strong relationship between hospital size and PPS margin. Whereas urban hospitals with fewer than 200 beds had an aggregate PPS margin of about –6 percent in the seventh year of PPS, those with 500 or more beds had a slightly positive margin. This may reflect the fact that larger hospitals in urban areas are more likely to receive both IME and DSH payments.

Among rural hospitals in the seventh year, the pattern is just the opposite. Although all hospital size groups in this category had negative PPS margins, margins were inversely related to size. The smallest rural hospitals (fewer than 50 beds) had a PPS margin of –2.6 percent, while the largest (at least 200 beds) had a margin of –7.7 percent. This is different than in previous years, perhaps due to the OBRA 1989 changes in payment rules for small rural Medicare-dependent hospitals and sole community hospitals.

Distribution of PPS Margins—The range of PPS margins grew substantially over the first seven years of PPS (see Table 2-10). During the first two years when PPS margins were generally high, there was less concern about hospitals with low margins. There were few hospitals for which PPS payments did not cover operating costs. As the average PPS margin falls and more hospitals experience financial difficulty under PPS, the distribution of PPS margins becomes increasingly important. By the seventh year of PPS, more than 60 percent of all hospitals had negative PPS margins. This compares with only 18.3 percent in the first year.

Moreover, the gap between hospitals that were doing best under PPS and those that were doing worst had become wider. In the first year of PPS, the middle half of all PPS hospitals had PPS margins ranging from 3.4 percent to 17.7 percent—a 14.3 percentage point spread. By the seventh year, this spread had grown to 22.4 percentage points.

The distribution of PPS margins was also very wide within each hospital group (see Table 2-11). Whereas urban hospitals had a higher aggregate PPS margin than rural hospitals in the seventh year,

Table 2-10. Distribution of PPS Operating Margins and Percentage of Hospitals with Negative Margins, First Seven Years of PPS

Percentile	PPS 1	PPS 2	PPS 3	PPS 4	PPS 5	PPS 6	PPS 7
10th	-6.7%	-8.5%	-14.7%	-18.1%	-23.3%	-27.8%	-30.4%
25th	3.4	2.0	-3.3	-6.6	-9.7	-13.9	-16.5
Median	11.2	10.6	5.7	3.5	1.1	-2.5	-4.8
75th	17.7	17.7	13.4	11.7	10.5	7.5	5.9
90th	23.1	24.1	19.5	18.7	18.2	15.9	15.0
Percentage of hospitals with negative PPS operating margins	18.3	20.3	32.7	40.3	47.1	56.0	61.3

Note: Data for each PPS year (PPS 1, PPS 2, etc.) correspond to each hospital's cost reporting period beginning in that year. For instance, the PPS 1 year includes data from each hospital's cost report beginning during the first year of PPS (Federal fiscal year 1984). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3 and New Jersey beginning with PPS 6.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

one-quarter of urban hospitals had margins below −16.4 percent, and one-quarter of rural hospitals had a PPS margin above 7.1 percent. In fact, a higher percentage of urban hospitals (62.0 percent) than rural hospitals (60.6 percent) had negative PPS margins.

The distribution of PPS margins among major teaching hospitals was consistently high relative to other hospital groups. Three-fourths of the hospitals in this group had seventh-year PPS margins greater than −1.8 percent; the corresponding margin for all hospitals was −16.5 percent. In addition to teaching hospitals, disproportionate share and large hospitals in urban areas (groups with considerable overlap) tended to have higher than average PPS margins across-the-board, although some hospitals even in these groups have substantial discrepancies between Medicare payments and costs.

Rural referral centers and the largest rural hospitals (again, groups with considerable overlap) were much more likely than other groups to have had negative PPS margins in the seventh year. Three-quarters of rural hospitals with at least 200 beds had PPS margins below −1.0 percent. Rural referral centers were unusual in that they had relatively uniform PPS margins; that is, the lowest and highest PPS margins in the category were less extreme than in most other groups.

OVERALL HOSPITAL FINANCIAL STATUS

Federal policy makers are showing increasing interest in analyzing the overall financial status of the hospital industry. One reason for this is that the effects of Medicare and Medicaid policies are not independent of the policies adopted by other payers and vice versa. Another is that continued access to hospital care for Medicare beneficiaries, Medicaid recipients, and others depends on hospitals' overall financial strength.

Hospital financial status has several dimensions and may be measured in different ways. This section begins with data on hospital resources and then describes the trend in total expenses and revenues. The overall performance of hospitals as represented by total hospital margins is then discussed.

Hospital Resources

The provision of hospital care requires many types of resources, including labor, capital, and other non-labor resources like pharmaceuticals, insurance, and food. The mix of these resources is critical in determining the nature, quality, and cost of the care provided.

This section first describes the use of hospital inpatient capacity, which is a key determinant of hospital resource use. Changes in hospital employment, non-labor inputs, and productivity are then reviewed. Finally, capital costs and tax-exempt financing, including access to debt markets, are addressed.

Inpatient Utilization—The extent to which inpatient capacity is used partially determines overall hospital costs. This is because the costs associated with some resources, such as plant and equipment, are fixed, regardless of the volume of patients treated. As the number of

Table 2-11. Distribution of PPS Operating Margins, by Hospital Group, Seventh Year of PPS (In Percent)

Hospital Group	Percentile			Percent with Negative PPS Margins
	25th	Median	75th	
All hospitals	-16.5%	-4.8%	5.9%	61.3%
Urban	-16.4	-5.0	5.1	62.0
Rural	-16.7	-4.5	7.1	60.6
Large urban	-16.4	-4.9	5.8	61.1
Other urban	-16.4	-5.2	4.3	62.9
Rural referral	-13.4	-5.9	2.2	69.2
Sole community	-17.9	-3.6	8.2	58.5
Other rural	-17.4	-4.3	7.2	59.9
Major teaching	-1.8	9.0	14.1	28.0
Other teaching	-12.7	-2.3	5.5	57.5
Non-teaching	-18.2	-5.9	5.3	63.4
Disproportionate share:				
Large urban	-9.9	1.4	10.8	46.2
Other urban	-12.6	-2.2	5.5	56.9
Rural	-12.5	-1.3	11.6	52.5
Non-disproportionate share	-18.0	-6.2	4.5	64.5
Payment adjustments:				
IME and DSH	-7.2	2.2	10.7	42.3
IME only	-14.4	-4.6	4.1	62.9
DSH only	-14.8	-2.9	7.4	58.1
No IME or DSH	-18.8	-6.4	4.6	64.7
Urban <100 beds	-19.1	-4.6	6.6	59.6
Urban 100-199 beds	-19.3	-6.0	3.9	65.5
Urban 200-299 beds	-15.8	-6.6	3.7	66.2
Urban 300-399 beds	-15.1	-5.4	3.9	62.8
Urban 400-499 beds	-11.5	-3.2	6.6	54.3
Urban 500+ beds	-11.5	0.1	8.8	49.0
Rural <50 beds	-19.3	-3.6	9.8	56.5
Rural 50-99 beds	-14.9	-3.6	6.1	60.2
Rural 100-149 beds	-16.8	-6.0	4.1	65.1
Rural 150-199 beds	-14.2	-4.9	2.1	68.5
Rural 200+ beds	-17.6	-9.3	-1.0	76.1
Voluntary	-15.4	-4.2	5.5	60.8
Proprietary	-22.0	-8.5	4.0	67.3
Urban government	-15.5	-2.6	8.5	57.0
Rural government	-18.3	-4.9	7.1	60.5

Note: Excludes hospitals in Maryland. DSH = disproportionate share payments. IME = indirect medical education payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

patients increases, these fixed costs can be spread across more patients and the cost per patient declines.

The use of inpatient capacity has fallen substantially since PPS was introduced. Although the number of beds has decreased an average of 1.2 percent per year since 1984, the decline in bed capacity generally has not kept pace with reductions in average length of stay and the number of admissions (see Table 2-12). In 1991, the number of hospital beds fell by about 1.0 percent but inpatient days

Table 2-12. Change in Average Hospital Occupancy Rate and Number of Beds, 1980-1991

Year	Occupancy Rate	Percent Change	Number of Beds*	Percent Change
1980	75.9%	1.9%	970,500	1.2%
1981	75.8	-0.1	986,900	1.7
1982	74.6	-1.6	997,700	1.1
1983	72.2	-3.2	1,003,700	0.6
1984	66.6	-7.8	992,600	-1.1
1985	63.6	-4.5	974,600	-1.8
1986	63.4	-0.4	963,100	-1.2
1987	64.1	1.1	954,500	-0.9
1988	64.5	0.6	942,300	-1.3
1989	64.9	0.6	930,100	-1.3
1990	64.5	-0.6	921,400	-0.9
1991	63.5	-1.6	911,800	-1.0
Averages:				
1980-1983	74.6	-0.8	989,700	1.1
1984-1991	64.4	-1.6	948,800	-1.2

* Numbers of beds are rounded to nearest 100.

SOURCE: American Hospital Association National Hospital Panel Survey.

Table 2-13. Change in Hospital Employment, 1981-1990 (In Percent)

Year	Full-Time Personnel	Part-Time Personnel	Unadjusted FTEs	Average Skill Mix
1981	3.6%	10.4%	4.5%	-0.1%
1982	1.9	3.5	2.2	0.2
1983	-0.2	0.1	-0.2	0.6
1984	-2.3	-4.2	-2.5	0.7
1985	-1.3	1.9	-0.8	0.4
1986	1.0	0.7	1.0	1.1
1987	2.8	3.1	2.9	0.1
1988	2.4	5.3	2.8	-0.2
1989	2.5	5.7	3.0	0.0
1990	3.0	5.5	3.3	-0.1
Averages:				
1981-1983	1.8	4.6	2.1	0.2
1984-1990	1.2	2.5	1.4	0.3

SOURCE: American Hospital Association Annual Survey and the Bureau of Labor Statistics (for average wage levels by labor category, used to measure skill mix).

dropped even faster. As a result, the aggregate occupancy rate dropped a full percentage point, to 63.5 percent. This is significantly below the average occupancy rate of 74.6 percent between 1980 and 1983. The largest decline in admissions and occupancy occurred in 1984 and 1985.

Changes in Hospital Employment—In the early 1980s, hospital employment levels were increasing. A slight decline in the number of full-time personnel in 1983 was followed by a substantial decrease in overall employment in 1984, including reductions in both full-time and part-time personnel (see Table 2-13). These declines were attributable primarily to falling admissions and inpatient lengths of stay, and occurred despite an increase in outpatient visits during this period. Employment began to grow again in 1986, with the rate of increase in part-time personnel exceeding the increase in full-time workers. In 1990, for example, the number of part-time personnel rose 5.5 percent, compared with 3.0 percent for employees working full time. Expanded use of part-time staff has helped hospitals recruit nurses and other patient care personnel and improve efficiency by aligning staffing levels with fluctuating volume. In 1990, labor costs were responsible for about 54 percent of total hospital expenses. Salaries accounted for 45 percent of total hospital spending, with employee benefits responsible for the other 9 percent.

The average skill mix of the hospital work force changed significantly during the 1980s.[13] From 1982 through 1987, skill mix increased by an average of more than one-half percent per year. Since 1988, however, there have been small reductions in skill mix, largely as a response to the shortages in registered nurses (RNs) and other professionals.

The general trend toward using more skilled workers was most evident for nursing personnel (see Table 2-14). Between 1981 and 1987, RNs as a proportion of all nursing personnel grew from about 49 percent to 65 percent. Somewhat smaller increases in the proportion of more highly trained personnel occurred in occupational therapy and physical therapy during this period. For medical records and pharmacy, the proportion of employees in more skilled categories remained fairly steady throughout the decade, declining slightly in the late 1980s.

After adjusting for skill-mix changes, hospitals continue to incur higher labor expenses per full-time equivalent (FTE) employee. Total compensation rose about 12 percent per year in the early 1980s, but these increases abated in 1984 (see

Table 2-14. Professional Personnel in Various Labor Categories, 1981-1990 (In Percent)

Labor Category	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Nursing	48.7%	50.5%	57.0%	60.0%	62.5%	64.6%	65.1%	64.9%	64.9%	64.8%
Medical records	16.4	16.3	16.4	16.1	15.9	15.9	16.2	15.2	15.0	14.8
Pharmacy	54.4	54.0	54.1	54.6	54.7	54.1	53.9	53.3	53.0	52.3
Occupational therapy	74.5	76.0	78.6	79.1	79.5	81.4	80.3	80.4	79.3	78.8
Physical therapy	52.7	52.9	53.5	55.1	55.9	57.0	56.9	57.0	57.2	56.8

Note: Professional personnel are registered nurses, medical records administrators, licensed pharmacists, occupational therapists, and physical therapists.

SOURCE: American Hospital Association Annual Survey.

Table 2-15). This reflected a lower level of inflation in the general economy as well as hospitals' responses to PPS incentives. For total compensation per FTE, there was an average annual increase of only 3.8 percent from 1985 to 1987, but the rate of increase has accelerated to an average of 6.8 percent since 1987. These more recent increases were driven primarily by substantial growth in benefit expenses per FTE, reflecting rising health insurance expenses. Higher wages necessary to respond to shortages of nursing and other allied health personnel also influenced the increases since 1987.

Non-Labor Costs—In 1991, approximately 38 percent of total hospital expenses were for non-labor resources other than capital.[14] These include such items as pharmaceuticals, food, energy, malpractice insurance, and surgical and medical instruments. Since PPS was implemented, non-labor expenses have grown faster than those for labor in every year. From 1984 through 1987, the average annual increase in non-labor expenses was more than three percentage points greater than the increase in labor expenses. From 1987 through 1990, the difference was a more modest 0.8 percentage points per year. In 1991, however, non-labor expenses grew more than two percentage points faster than labor expenses.

Table 2-15. Change in Labor Expenses Per FTE Employee, 1981-1989 (In Percent)

Year	Salary Expenses	Benefit Expenses	Total Compensation
1981	11.8%	17.1%	12.5%
1982	11.8	18.4	12.7
1983	9.4	15.4	10.3
1984	6.7	10.0	7.2
1985	4.1	6.0	4.4
1986	3.6	1.2	3.2
1987	3.9	2.4	3.7
1988	7.0	7.8	7.1
1989	5.7	10.9	6.5

Note: Expenses and total compensation are adjusted for changes in skill mix.
FTE = full-time equivalent.

SOURCE: American Hospital Association Annual Survey.

Hospital Productivity Change—One of the key factors determining the level of hospital cost inflation is the change in productivity, or how much product is obtained for the resources spent. Increased productivity implies that the hospital is either producing more output with the same resources, or the same output with fewer resources.

ProPAC has developed productivity measurements for the goods and services (inputs) used by hospitals to produce inpatient care. Separate productivity measures have been devised for labor inputs and for supply and service inputs (covering all non-labor items except capital). A composite input measure for all non-capital inputs has been calculated as well. ProPAC's labor measure is number of FTEs, with an adjustment for skill-mix change in the hospital work force. The supply and service measure is based on the overall cost of these inputs, with an adjustment to remove the effects of annual price increases.

The Commission defines hospital output as the number of admissions, with adjustments for real case-mix change and outpatient activity. The resulting productivity measure of either FTEs or supply and service inputs per adjusted admission implicitly assumes that hospital services are inputs contributing to the production of the final output—a completed admission.

The Commission uses two measures that permit the changes in aggregate productivity to be examined in more detail. The first measure, referred to as intermediate productivity, provides information regarding the efficiency of hospitals in producing intermediate services (laboratory tests, surgeries, days of nursing care, and so forth). The second measure examines changes in the number and type

of intermediate services that hospitals produce, after controlling for changes in the complexity of patients treated. These case-mix constant service intensity increases may reflect longer lengths of stay, greater use of existing technology, or the adoption of expensive new technology to provide service add-ons or substitute for less complex procedures.[15]

As part of the initial response to prospective payment, hospitals reduced their intensity of services significantly, with most of the reduction taking the form of a decline in length of stay (see Table 2-16). Intensity growth resumed after the first two years of PPS, however, rising by more than 2 percent in both 1986 and 1987. Since then, the industry has succeeded in steadily scaling back the size of its intensity increases, to 1.6 percent in 1988, to 0.8 percent in 1989, and finally to zero in 1990.

This reduced intensity growth, coupled with at least modest intermediate labor productivity gains each year, would be expected to have an impact on overall cost growth. This was not observed in 1988 and 1989 because the savings were offset by larger input price increases. These included higher salary increases that coincided with the height of the nurse shortage and higher inflation for some supplies and services hospitals purchase. But in 1990, the unchanged intensity of services contributed to slowing down the rate of hospital cost increases a full percentage point below the previous four-year average.

After PPS was implemented, aggregate labor productivity improved for two years and then declined for two years. For the past three years, productivity has varied within a fairly narrow range. Cumulatively over this seven-year period, labor productivity has improved by about 1 percent (see Figure 2-3). Supply and service productivity, conversely, has declined sharply although the pattern by year is similar to that of labor productivity. The decline was moderate in the first two years after PPS began, substantial in the next two and has been relatively small ever since. Cumulatively, supply and service productivity has dropped by more than 21 percent. When labor and supply and service inputs are combined, the cumulative reduction in productivity is about 11 percent.

There are at least three reasons for the significant decrease in measured supply and service input productivity. First, hospitals have substituted supply items for labor to produce patient care services. Examples are the increased use of prepackaged pharmaceuticals, which reduces pharmacy labor requirements, and the growing use of disposable supplies, which reduces the need for labor-intensive sterilizing.

Second, hospitals have stepped up their use of items such as surgical gloves and double-wrapped specimen containers for controlling the spread of AIDS and other infectious diseases. These items are considered quality enhancing, and the effects of their increased usage should not be counted as contributing to the measured productivity decline. However, this is not possible with available data.

Table 2-16. Change in Aggregate Labor Productivity and Related Indicators, 1984-1990 (In Percent)

Year	Intermediate Productivity[a]	Case-Mix Constant Intensity	Aggregate Productivity[b]	Operating Cost Per Admission[c]
1984	0.1%	-2.6%	2.7%	6.6%
1985	-1.6	-2.2	0.6	7.6
1986	1.5	2.4	-1.0	8.5
1987	0.8	2.5	-1.7	8.9
1988	2.0	1.6	0.4	9.3
1989	0.2	0.8	-0.7	8.8
1990	0.6	0.0	0.6	7.9

Note: Change in intermediate productivity minus change in intensity of services equals change in aggregate productivity, although this relationship may not be exact due to rounding. FTE = full-time equivalent.

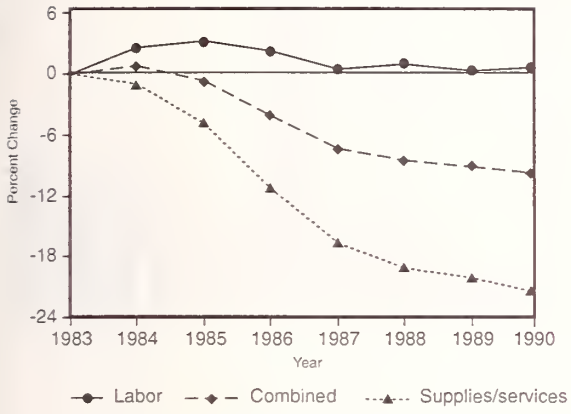
[a] Defined as service output per FTE.

[b] Defined as real case-mix adjusted admissions per FTE, with admissions adjusted for outpatient activity.

[c] Excludes capital costs; admissions adjusted for outpatient activity.

SOURCE: ProPAC (for the real case-mix change adjustment), the hospitals and related institutions component of the Consumer Price Index (for the measure of service output), and the American Hospital Association Annual Survey.

Figure 2-3. Cumulative Change in Aggregate Productivity: Labor, Supplies/Services, and Combined, 1983–1990 (In Percent)



Note: Aggregate productivity defined as the ratio of admissions either to FTE employees or to supplies/services inputs. Admissions adjusted for outpatient activity and real case-mix change, and FTEs adjusted for skill-mix change.

SOURCE: ProPAC estimates (for case-mix adjustment), Health Care Financing Administration market basket components (for supplies/services productivity measurement), and the American Hospital Association Annual Survey.

Third, because of data limitations, contract labor is counted as a supply and service input rather than as labor in the data used for the productivity analysis. The use of contract labor probably increased significantly over the analysis period. Therefore, this misplacement has presumably caused an understatement of supply and service productivity and an overstatement of labor productivity. The combined productivity measure, however, should not be affected by this data problem.

Capital Costs—In 1991, capital depreciation and interest expense represented about 9.0 percent of hospital operating costs (see Table 2-17). This is a slight decrease from the levels of the late 1980s. From 1980 until 1987, capital costs grew substantially faster than operating costs. As a result, capital costs assumed a growing share of hospital costs.

Capital costs increased about 7.7 percent from 1990 to 1991. This was the smallest rate of increase in at least 15 years (see Figure 2-4). The slowing in the rate of growth in capital costs was due largely to the comparatively small increase (3.2 percent) in interest expense in 1991. Depreciation expense,

Table 2-17. Change in Capital as a Proportion of Total Cost and of Operating Cost, 1980-1991 (In Percent)

Year	Capital/ Total Cost	Annual Percent Change	Capital/ Operating Cost	Annual Percent Change
1980	6.2%	-1.5%	6.6%	-1.6%
1981	6.3	1.4	6.7	1.5
1982	6.5	4.2	7.0	4.5
1983	6.9	6.3	7.5	6.8
1984	7.9	13.1	8.5	14.2
1985	8.3	5.3	9.0	5.8
1986	8.4	2.0	9.2	2.2
1987	8.5	1.0	9.3	1.1
1988	8.5	-0.5	9.3	-0.6
1989	8.5	-0.1	9.3	-0.1
1990	8.4	-0.7	9.2	-0.8
1991	8.3	-2.0	9.0	-2.1

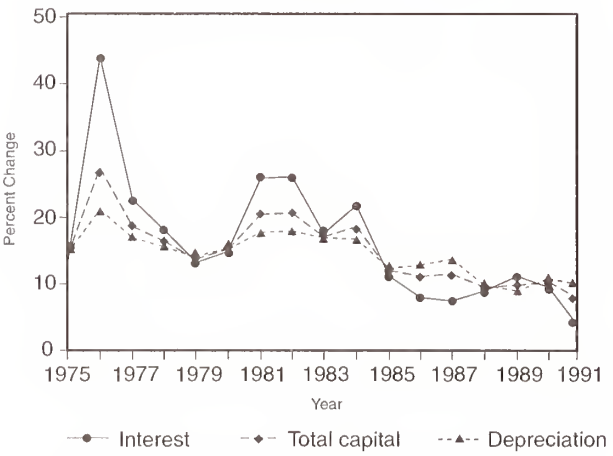
SOURCE: ProPAC analysis of American Hospital Association National Hospital Panel Survey.

approximately two-thirds of total capital costs, rose 10.0 percent.

Hospital capital costs would be expected to rise as hospitals replace historical capital depreciation costs—based on the original prices of old assets—with higher current costs resulting from the capital projects they undertake. Currently, the rate of increase is the subject of considerable interest, because Medicare began paying for hospital capital costs on a prospective per-case basis in fiscal year 1992. This refinement of the payment system was developed to provide hospitals with incentives to control the growth in capital costs. With the implementation of the system, payment increases will be tied to a capital update factor rather than to actual cost increases.

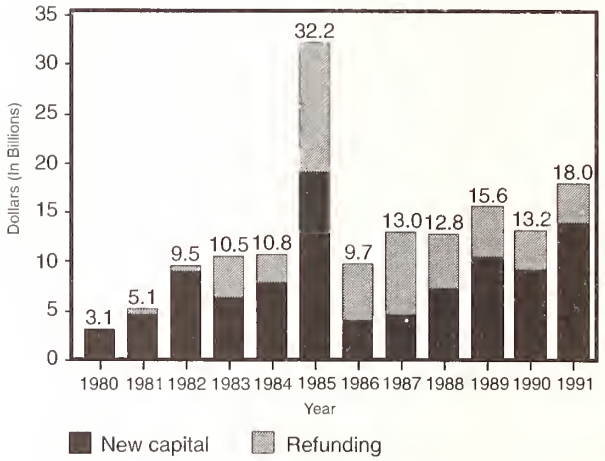
Tax-Exempt Debt Financing and Access to Debt Markets—Debt financing has become a critical part of hospital capital financing. Total tax-exempt health care and nursing home bond volume increased nearly 37 percent from 1990 to 1991 (see Figure 2-5). Total health care and nursing home tax-exempt municipal bond volume was approximately $18 billion in 1991. General acute care hospitals accounted for about 81 percent of total tax exempt bond volume in 1991. As interest rates declined in the later part of the 1980s, a significant portion of bond volume related to refinancing prior issues. Howev-

Figure 2-4. Change in Capital Costs: Interest, Total Capital, and Depreciation, 1975–1991 (In Percent)



SOURCE: American Hospital Association National Hospital Panel Survey.

Figure 2-5. Health Care and Nursing Home Tax-Exempt Municipal Bond Volume, 1980–1991 (In Billions)



SOURCE: Securities Data Co., Inc., under contract to ProPAC.

er, in 1991 more than 70 percent was for new capital.

Hospitals' access to tax-exempt financing is contingent on several factors. One is the credit rating of the health care facility. Credit ratings are based on such factors as the strength of the industry, the hospital's marketing position and operating efficiency, and the adequacy of hospital cash flow. A higher credit rating generally results in a lower interest rate. One method of obtaining a higher rating is to purchase enhancements, such as bond insurance or a bank letter of credit. Credit enhancements often are necessary for many hospitals to secure access to the debt market at affordable rates. In recent years, a larger portion of hospital bonds have been backed by some form of credit enhancement. In 1991, about 58 percent of the bond volume was backed by credit enhancements compared with only 3 percent in 1980. Further, the proportion of bond insurance with AAA rating has risen steadily along with the proportion backed by credit enhancements.

Bond ratings also reflect the market's perception of a hospital's financial viability. Since 1983, the number of changes in hospital bond ratings has increased. In 1983, the ratio of downgrades to upgrades was 2.1 to 1. In 1991, Standard and Poor's lowered the credit rating of about 130 issues, affecting $2.7 billion; it upgraded only 10, affecting $446 million. However, 76 of the 130 downgrades, or 58 percent, were the result of a decline in California's general bond rating.[16] Excluding California would reduce the ratio of downgrades to upgrades from 13 to 1 to 5.4 to 1. This still represents an increase from 1989 and 1990, when the ratio was about 3 to 1. Credit analysts expect this trend to continue, because declining volume and increasing constraints on revenue are reducing hospitals' cash flow and profitability.

Hospital Expenses and Revenues

The key factors in determining hospitals' overall financial status are the flows of total expenses and total revenues. The sources of hospital revenue by the types of services that generate them are described below. Trends in total expenses and revenues are then compared to indicate the extent to which hospitals have succeeded in controlling the increase in expenses and whether revenues have kept up with these increases.

Sources of Hospital Revenues—The mix of hospital revenues by type of service has changed over time (see Table 2-18). Inpatient services still account for most hospital revenues, but declined to 71 percent in 1991 from 83 percent in 1980. Outpatient services are an increasingly important revenue source, accounting for 24 percent of revenue in 1990 compared with 13 percent in 1980.

Table 2-18. Change in Hospital Revenue and Proportion of Revenues, by Source, 1980-1991 (In Percent)

Year	Change in Revenue: Inpatient Revenue Per Admission	Change in Revenue: Outpatient Revenue Per Visit	Proportion of Revenues: Inpatient	Proportion of Revenues: Outpatient	Proportion of Revenues: Other
1980	14.5%	15.8%	83.2%	12.5%	4.3%
1981	17.3	19.2	82.7	12.7	4.5
1982	16.2	16.8	82.7	12.9	4.4
1983	10.4	11.5	82.4	13.4	4.2
1984	8.6	12.4	81.3	14.4	4.3
1985	8.9	13.2	79.3	16.1	4.6
1986	8.5	8.3	78.0	17.5	4.5
1987	8.9	10.7	76.8	18.6	4.6
1988	8.5	11.4	75.2	20.0	4.8
1989	9.4	11.5	74.0	21.1	4.9
1990	9.2	11.7	72.5	22.5	5.0
1991	9.3	12.0	71.1	24.0	4.8
Averages:					
1980-1983	14.6	15.8			
1984-1991	8.9	11.4			

SOURCE: American Hospital Association National Hospital Panel Survey.

Much of the greater reliance on outpatient revenue can be explained by the shift of hospital services to outpatient settings, as described in Chapters 1 and 4. Large increases in outpatient revenue as a proportion of total revenues began during the early years of PPS. This reflected declines in admissions for both the Medicare and non-Medicare populations, sharp reductions in the average length of stay for Medicare beneficiaries, and a decline in ancillary services provided during inpatient stays. These changes were consistent with the incentives of PPS and the utilization review efforts of the Federal Peer Review Organizations and private payers. They were facilitated by technological changes that made it easier to provide many services on an outpatient basis. Outpatient revenue has grown at a faster pace than inpatient revenue in each of the past dozen years.

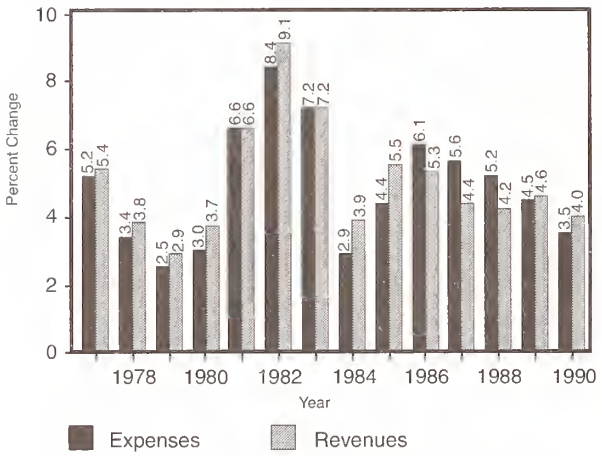
Outpatient revenue per visit has grown rapidly as well, at an average annual rate of 11.4 percent between 1984 and 1991, compared with 8.9 percent for inpatient revenue per admission. This difference may reflect the shift of more complex procedures from the inpatient setting, as well as more rigorous controls on inpatient payments than on outpatient payments.

Non-patient revenue has also become more important in recent years. These dollars come from philanthropic sources, government grants, interest on endowments, and services and concessions such as physician office buildings, parking lots, and gift shops. Non-patient revenue has grown as a proportion of total hospital revenues since PPS has been in effect, although this proportion declined from 5.0 percent in 1990 to 4.8 percent in 1991.

Trends in Hospital Expenses and Revenues— The patterns of annual changes in hospital expenses and revenues have had peaks and valleys in the past decade and a half (see Figure 2-6). Real expenses per adjusted admission increased between 2.5 percent and 3.4 percent annually in the late 1970s, perhaps in response to the Carter Administration's voluntary cost containment program.[17] In the early 1980s, however, hospital costs per case grew at a much faster rate, increasing 8.4 percentage points more than the general rate of inflation in 1982.

With the introduction of PPS, the increase in real expenses per adjusted admission slowed to 2.9 percent in 1984. This was the smallest growth since the early 1970s, but hospital inflation was still greater than inflation in other sectors of the economy.

Figure 2-6. Change in Real Hospital Expenses and Revenues Per Admission, 1977–1990 (In Percent)



SOURCE: American Hospital Assoication Annual Hospital Survey and U.S. Department of Commerce, Bureau of Economic Analysis.

The following five years saw another increase in hospital inflation, with real costs per case rising between 4.4 percent and 6.1 percent annually. The real increase in expenses per adjusted admission slowed to 3.5 percent in 1990, the smallest increase since the first year of PPS. Whether this indicates a trend remains to be seen.

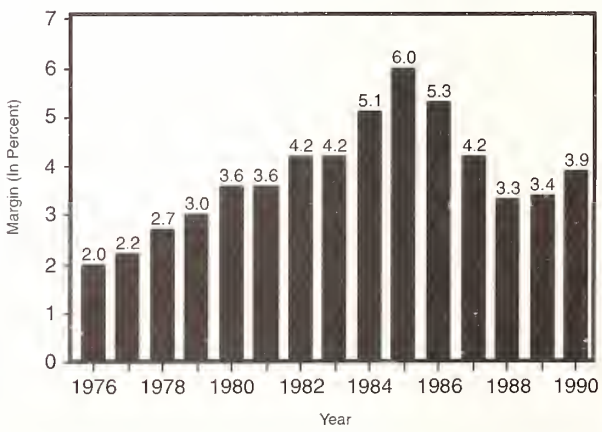
Not surprisingly, hospital revenues tended to follow the trend in hospital expenses relatively closely during the 1970s. In the 1980s, however, there were greater differences between increases in revenues and expenses. In 1982, when real expenses per adjusted admission increased at the fastest rate of the decade (8.4 percent), real revenues per adjusted admission grew even more rapidly (9.1 percent). In the first two years of PPS, real costs per case increased by a cumulative 7.5 percent, while real revenues per case rose by 9.6 percent. The years from 1986 to 1988 saw cost increases that exceeded the growth in revenues. In 1989 and 1990, the rates of increase were slightly higher for revenues than for costs.

Total Hospital Margins

The total margin compares hospital revenues and expenses for all inpatient and outpatient care as well as for non-patient care activities. It is a useful indicator of overall hospital financial status. Trends in total margins over time are described below using data from the American Hospital Association's (AHA) Annual Survey of Hospitals. The distribution of total margins across hospital groups under PPS is then discussed using data from the Medicare Cost Reports submitted to HCFA. The AHA and HCFA data may differ slightly because they are derived from different sources and they cover somewhat different reporting periods. They are generally comparable, however, and the cost report data are useful in indicating trends across hospital groups. These data also are used to describe the distribution of total margins within hospital groups.

Trends in Total Margins—As the data on expenses and revenues discussed above indicate, there has been a cyclical trend in total hospital margins over the past 15 years (see Figure 2-7). In 1976, the aggregate total margin was 2.0 percent, reflecting a recovery of sorts from the restrictions of the Economic Stabilization Program of wage and price controls that was in effect from 1971 to 1974. Although both revenues and expenses climbed slowly (but still more than economywide prices) during the late 1970s, revenues grew faster, and the total margin rose to 3.6 percent by 1980. In the early 1980s, expenses began to rise rapidly, but again revenues grew even more rapidly, resulting in a total margin of 4.2 percent by 1983.

Figure 2-7. Aggregate Total Revenue Operating Margin, 1976–1990 (In Percent)



SOURCE: American Hospital Association Annual Hospital Survey.

The early years of PPS, in which hospitals had large Medicare surpluses, saw a large increase in the aggregate total margin, which reached a peak of 6.0 percent in 1985. In subsequent years as Medicare tightened its control of inpatient payment rate increases, the aggregate total margin began to fall, dropping to 3.3 percent by 1988. In the late 1980s, the decline in the aggregate total margin appeared to have leveled off, even rising slightly to 3.9 percent by 1990.

Overall financial performance was far from uniform across hospital groups. In the first year of PPS, the total margin for urban hospitals was 2.6 percentage points higher than for rural hospitals (see Table 2-19). This gap narrowed steadily before disappearing in the fifth year. In the sixth and seventh years, the rural hospital margin exceeded that for urban hospitals by 0.5 percentage points.

Hospitals in large urban areas have had consistently lower total margins than hospitals in other urban areas. Rural referral centers have consistently had higher total margins than other rural hospitals. Sole community hospitals also had higher margins than hospitals in the other rural category in the first four years of PPS, but this differential has almost disappeared.

Major teaching hospitals consistently have had lower total margins than other teaching or non-teaching hospitals. The total margin for disproportionate share hospitals in large urban areas has always been significantly below average. Non-disproportionate share and disproportionate share hospitals located in other urban and rural areas have all had aggregate total margins that far exceed those of disproportionate share hospitals in large urban areas.

Among the four combined teaching and disproportionate share groups, the lowest margins have been found consistently in hospitals receiving both IME and DSH payments. The highest margins are in teaching hospitals that do not get DSH payments. Disproportionate share hospitals that do not receive IME payments have also had relatively low total margins, but their situation seemed to improve in the seventh year of PPS. This improvement may be due to the additional payments for rural disproportionate share hospitals (which are less likely to be teaching hospitals) resulting from OBRA 1989 (see the discussion above).

Finally, in both urban and rural areas, the smallest hospitals had substantially lower total margins than the other size groups in the seventh year. Unlike urban hospitals, however, the largest rural hospitals had considerably higher total margins than the other groups.

Distribution of Total Margins—As is the case with the PPS margins discussed earlier in this chapter, total margins also vary widely among individual hospitals within any group, and this distribution has become more dispersed over time. By the seventh year of PPS, 26.2 percent of all PPS hospitals had negative total margins; however, one in every four of these hospitals had a total margin of greater than 7.2 percent (see Table 2-20).

The distribution of total margins within the urban and rural groups at first appears inconsistent with the aggregate margins cited above. Although rural hospitals had a higher aggregate total margin than urban hospitals in the seventh year, more of them had negative margins (30.5 percent compared with 21.8 percent). The spread between the rural hospitals with the highest total margins and those with the lowest was much wider than that for urban hospitals. This may reflect the effects of policy changes that may affect some groups of rural hospitals but not others.

Rural referral centers are unusual in that only 7.7 percent had negative total margins in the seventh year of PPS. One-quarter in fact had total margins exceeding 12.3 percent. A number of other rural hospitals also had high total margins, even though they were four times likelier than rural referral centers to have negative margins.

Another apparent contradiction is the case of major teaching hospitals. Although they had significantly lower total margins as a group than non-teaching hospitals, they were also far less likely to have negative margins. Few major teaching hospitals have especially high total margins, but not many have very low margins either. This may reflect the fact that teaching hospitals are more likely to receive public support for their teaching activity and special patient care services (such as uncompensated care).

COST SHIFTING

The data presented above show that both PPS and total margins vary widely across and within

Table 2-19. Total Hospital Margins, by Hospital Group, First Seven Years of PPS (In Percent)

Hospital Group	PPS 1	PPS 2	PPS 3	PPS 4	PPS 5	PPS 6	PPS 7
All hospitals	7.3%	6.5%	4.6%	3.5%	3.7%	3.7%	4.2%
Urban	7.7	6.8	4.8	3.6	3.7	3.6	4.1
Rural	5.1	4.8	3.2	3.1	3.7	4.1	4.6
Large urban	7.5	6.5	4.3	2.8	3.1	2.8	3.3
Other urban	8.0	7.1	5.5	4.6	4.5	4.7	5.0
Rural referral	6.9	7.3	5.4	5.2	5.7	5.8	6.0
Sole community	4.5	3.6	2.4	2.5	2.5	3.1	3.9
Other rural	4.1	3.4	1.8	1.7	2.6	2.9	3.8
Major teaching	5.2	5.5	3.4	2.3	3.1	1.6	2.5
Other teaching	8.1	6.9	5.2	3.9	3.8	4.1	4.2
Non-teaching	7.3	6.4	4.4	3.8	3.8	4.2	4.6
Disproportionate share:							
Large urban	5.8	5.2	3.0	1.5	1.9	1.3	1.7
Other urban	7.7	6.4	5.3	4.0	4.4	4.7	4.8
Rural	5.3	5.0	2.7	2.3	4.0	4.1	5.5
Non-disproportionate share	7.8	7.0	5.1	4.3	4.1	4.2	4.6
Payment adjustments:							
IME and DSH	6.3	5.6	4.0	2.5	3.0	2.7	2.9
IME only	8.7	7.7	5.6	4.5	4.4	4.2	4.6
DSH only	7.4	6.0	3.9	2.9	3.6	3.7	4.7
No IME or DSH	7.2	6.5	4.7	4.1	3.9	4.3	4.6
Urban <100 beds	4.0	3.3	1.8	1.1	1.0	1.0	2.3
Urban 100-199 beds	6.9	5.5	3.3	2.7	2.4	2.9	3.8
Urban 200-299 beds	8.1	6.8	4.4	3.3	3.1	3.8	4.0
Urban 300-399 beds	7.6	6.8	4.8	3.8	3.9	3.8	4.4
Urban 400-499 beds	8.8	7.8	6.2	4.2	4.3	4.5	4.3
Urban 500+ beds	8.3	7.6	5.8	4.4	4.8	3.8	4.2
Rural <50 beds	2.8	2.2	0.5	0.8	1.2	1.8	1.9
Rural 50-99 beds	4.8	3.5	2.0	2.1	2.6	3.1	4.2
Rural 100-149 beds	5.1	4.6	3.5	3.2	3.8	3.8	4.8
Rural 150-199 beds	5.6	5.8	4.2	4.1	4.9	5.6	6.0
Rural 200+ beds	7.0	7.6	5.4	5.2	5.7	5.8	5.6
Voluntary	7.8	6.9	4.9	3.6	3.7	3.8	4.2
Proprietary	7.9	7.0	4.6	5.0	4.1	3.2	4.3
Urban government	5.1	4.4	3.1	2.1	3.2	3.5	3.8
Rural government	4.8	3.7	2.4	2.2	3.1	3.4	4.3

Note: Data for each PPS year corresponds to each hospital's cost reporting period beginning in that year. For instance, PPS 1 includes data from each hospital's cost report beginning during the first year of PPS (fiscal year 1984). Excludes hospitals in Maryland; includes hospitals in Massachusetts and New York beginning with PPS 3 and New Jersey beginning with PPS 6. DSH = disproportionate share payments. IME = indirect medical education payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

hospital groups. A comparison of these data also indicates that the patterns of PPS and total margins are very different. This section describes some of the differences in hospital charges, payments, and costs by payer and the impact on both hospital financial status and the incentive to constrain cost growth. This difference in relative charge and payment levels across payers is frequently referred to as cost shifting.

PPS and Total Margins

Both PPS and total margins are much lower now than they were when PPS began (see Figure 2-8).

Table 2-20. Distribution of Total Hospital Margins, by Hospital Group, Seventh Year of PPS (In Percent)

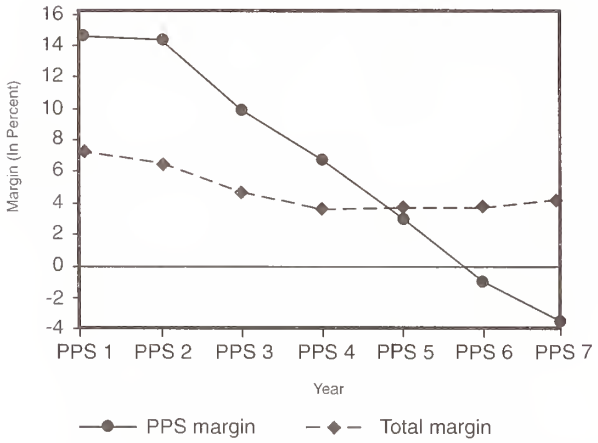
Hospital Group	Percentile			Percent with Negative Total Margins
	25th	Median	75th	
All hospitals	-0.8%	3.3%	7.2%	26.2%
Urban	0.1	3.5	10.6	21.8
Rural	-2.0	3.0	12.0	30.5
Large urban	-0.7	2.9	9.9	25.3
Other urban	0.6	3.9	11.0	18.8
Rural referral	2.8	5.5	12.3	7.7
Sole community	-3.4	2.6	11.9	34.1
Other rural	-2.5	2.5	12.0	32.9
Major teaching	0.0	2.1	8.1	20.5
Other teaching	0.6	3.6	10.1	20.6
Non-teaching	-1.2	3.2	11.6	27.6
Disproportionate share:				
Large urban	-1.4	2.0	8.9	29.6
Other urban	1.2	4.1	11.0	15.8
Rural	-0.5	3.4	14.2	24.3
Non-disproportionate share	-1.1	3.3	11.2	27.5
Payment adjustments:				
IME and DSH	0.0	2.9	6.0	23.5
IME only	0.9	3.9	7.2	18.1
DSH only	0.1	3.5	7.7	21.3
No IME or DSH	-1.5	3.1	7.2	29.1
Urban <100 beds	-3.3	1.7	6.3	33.2
Urban 100-199 beds	-0.1	3.4	6.9	23.0
Urban 200-299 beds	0.7	3.6	7.1	18.3
Urban 300-399 beds	1.1	4.7	8.1	16.2
Urban 400-499 beds	1.5	4.6	8.0	15.3
Urban 500+ beds	1.5	4.7	7.8	13.0
Rural <50 beds	-5.8	1.1	6.1	42.0
Rural 50-99 beds	-1.0	3.0	7.2	28.4
Rural 100-149 beds	1.4	4.8	7.8	16.6
Rural 150-199 beds	2.4	5.5	9.0	10.8
Rural 200+ beds	3.0	5.4	8.2	6.7
Voluntary	0.0	3.4	6.9	23.3
Proprietary	-4.3	2.7	8.1	32.7
Urban government	0.3	4.0	7.3	21.7
Rural government	-2.6	2.6	7.4	32.4

Note: Excludes hospitals in Maryland. DSH = disproportionate share payments. IME = indirect medical education payments.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

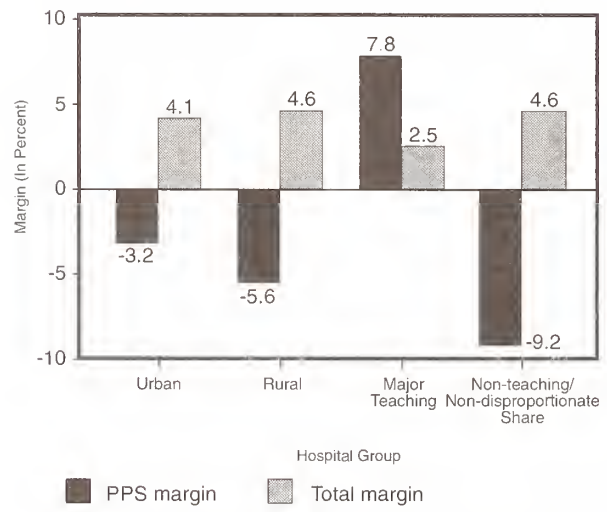
However, the decline in PPS margins has been much steeper than the decline in total margins. The aggregate PPS margin for all hospitals was much higher than the total margin in the first two years of PPS. But by the fifth year, the PPS margin had fallen below the total margin. The aggregate total margin has improved somewhat since the fifth year of PPS, while the aggregate PPS margin has fallen well below zero. By the seventh year of PPS, the total margin was almost eight percentage points higher

Figure 2-8. PPS and Total Margins, First Seven Years of PPS (In Percent)



SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Figure 2-9. PPS and Total Margins for Selected Hospital Groups, Seventh Year of PPS



SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

than the PPS margin, compared with more than seven percentage points lower in the first year. This pattern indicates that, relative to costs, revenue from other payers has been increasing substantially faster than Medicare payments in recent years.

Many hospital groups have PPS and total margins that differ substantially from the pattern observed for all hospitals. For instance, for rural hospitals in the seventh year of PPS, the PPS margin was –5.6 percent, but the total margin was 4.6 percent—a difference of more than 10 percentage points (see Figure 2-9). By contrast, the PPS margin for major teaching hospitals was more than five percentage points higher than their total margin, 7.8 percent compared with 2.5 percent. There is wide variation in the differential between PPS and total margins for hospitals within each hospital group as well, although, for individual hospitals within each group, higher PPS margins are correlated with higher total margins.

Hospital Financial Status and Cost Shifting

The data on PPS and total margins raise the question of how revenues from Medicare, Medicaid, and other payers are related. Hospitals need to generate extra revenue from privately insured patients and other sources to cover uncompensated care costs. They also need to cover those costs that exceed payments for the care furnished to Medicare and Medicaid beneficiaries. The 4.2 percent aggregate total margin in the seventh year of PPS indicates that, as a whole, hospitals were able to cost shift. However, there was considerable variation across hospital groups (and among hospitals within each group) in the ability to do so.

Data on charges and costs by payer and hospital group in 1989 (the most recent information available to ProPAC) illustrate the extent and variation of cost shifting activity. On average, hospital charges were 37 percent higher than their patient care costs in 1989 (see Table 2-21). Urban hospitals had a higher average markup than rural hospitals: 44 percent compared with 30 percent. Medicare disproportionate share hospitals had an average markup of 47 percent.

Proprietary hospitals had both the highest total margin, 4.3 percent, and the highest average markup, 62 percent, of any hospital group in the analysis. Government hospitals had the lowest average markup, 27 percent. This was due partly to the reliance of government hospitals on public subsidies to provide funds for their continued operation. Government hospitals also had a lower total margin than the voluntary or proprietary groups.

Table 2-21. Total Margin, Markup, and Payment to Cost Ratios, by Hospital Group, 1989

Hospital Group	Aggregate Total Margin (PPS 6)	Average Charge: Cost Ratio (Markup)	Average Payment to Cost Ratio		
			Private	Medicare	Medicaid
All hospitals	3.7%	1.37	1.28	0.91	0.74
Urban	3.6	1.44	1.29	0.92	0.72
Rural	4.1	1.30	1.28	0.89	0.76
Teaching	3.3	1.42	1.25	0.93	0.75
Non-teaching	4.2	1.36	1.29	0.90	0.74
Disproportionate share	3.0	1.47	1.33	0.92	0.76
Non-disproportionate share	4.2	1.34	1.26	0.90	0.73
Voluntary	4.2	1.37	1.27	0.92	0.75
Proprietary	4.3	1.62	1.41	0.87	0.70
Government	3.5	1.27	1.24	0.89	0.75

Note: Margins are for PPS 6. Markups and payment to cost ratios are for 1989. Payment to cost ratios are based on American Hospital Association data, and do not correspond to margins calculated using Medicare Cost Report data.

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration and American Hospital Association Annual Hospital Survey.

Medicare payments to hospitals, which are set nationwide, and Medicaid payments, which depend on state-level decisions about coverage and payment levels, bear little resemblance to hospital charges. Both Medicare and Medicaid payments are substantially below costs. Payments from private insurers are higher than costs, on average, and seem to vary directly with charges. For proprietary hospitals, which have the highest average charge markup, private insurers' payments exceed costs by an average of 41 percent. Teaching hospitals and government hospitals, on the other hand, have the lowest relative levels of payment from private payers.

Need and Ability to Cost Shift

The variation in total margins both across and within hospital groups indicates that a hospital's need to cost shift does not necessarily correspond to its ability to generate extra revenue from privately insured patients. Hospitals need to cost shift if they provide substantial amounts of uncompensated care or incur costs greater than payments for the care provided to Medicaid and Medicare patients. However, a hospital's ability to cost shift depends on both the number of privately insured patients it treats and the prices those insurers pay (see Table 2-22).

Table 2-22. Payment to Cost Ratio for Private Payers, by the Need and Ability of Hospitals to Cost Shift, 1989

Ability to Cost Shift	Need to Cost Shift					
	None		Moderate		Greatest	
	Ratio	Number of Hospitals	Ratio	Number of Hospitals	Ratio	Number of Hospitals
Unable	0.77*	87	0.90	200	0.86	218
Less able	--	--	1.14	593	1.27	1,366
More able	1.48	251	1.34	1,521	1.50	730

Note: Ability to cost shift measures private payers' payments in relation to their costs plus the combined cost of uncompensated care and shortfalls from government payers. Need to cost shift measures the combined cost of uncompensated care and shortfalls from government payers in relation to total operating costs. Estimates are hospital-weighted.

* Payment to cost ratio and the number of hospitals.

SOURCE: ProPAC analysis of American Hospital Association Annual Survey data.

The need to cost shift may be measured by the difference between revenues from Medicare, Medicaid, and local government subsidies and costs incurred for charity care, bad debt, and care provided to Medicare and Medicaid patients. Using this definition, 7 percent of all hospitals had no need to cost shift in 1989. The remaining hospitals may be divided into two groups of equal size based on their need to cost shift as a proportion of their total expenses; these groups are referred to as having "moderate" and "greatest" need to cost shift.

Hospitals are unable to cost shift if they do not recover enough from private payers to cover the cost of care provided to privately insured patients. About 10 percent of all hospitals fell into this category in 1989. Another 40 percent had a limited ability to cost shift. These hospitals received payments exceeding the costs of privately insured patients, but this payment differential did not match their need to cost shift. As a result, these hospitals incurred losses on their patient care activities. Many of these hospitals had positive total margins, however, because they generated sufficient revenue from other sources (non-patient care operating revenue and non-operating revenue) to offset their patient care losses. The remaining 50 percent generated sufficient revenue from privately insured patients to cover their need to cost shift.

There seems to be some relationship between the need to cost shift and the degree of cost shifting. Furthermore, the payment to cost ratio for private payers tended to be higher among those hospitals most able to cost shift. However, it is not clear whether this is because hospitals that were better able to cost shift were under less pressure to extend discounts to private payers or whether hospitals that had higher prices were more likely to cover their cost shifting needs.

CONCLUSIONS

The information presented in this chapter describes the trends in and distribution of PPS payments and costs, focusing on the impact of payment policy and other changes that have affected the way that hospitals behave and perform financially under PPS. As the payment system matures and as more changes focused on specific groups of hospitals are implemented, it is clear that such policies can have a substantial effect on the payments those groups of hospitals receive. Among the policies implemented in the past few years are the differential update in the rural hospital payment rate, the expansion of eligibility for and increase in the level of DSH payments, the special provisions for sole community hospitals and small rural Medicare-dependent hospitals, and geographic reclassification.

These policies have all affected the distribution of Medicare payments. In some cases, the policy changes were intended to correct payment inequities that were thought to have been inherent in the system at the outset. In others, they were intended to provide a payment cushion for hospitals that provide socially beneficial services so that access to those services is maintained for Medicare beneficiaries and other populations about which the Federal government is concerned.

It still may be too early to tell whether the implementation of PPS and subsequent policy refinements have had the effects policy makers intended. Medicare operating costs grew somewhat more slowly in the seventh year of PPS than formerly. Whether this phenomenon constitutes a trend is not yet known. As PPS margins go toward or below –10 percent, hospitals may begin to feel pressure to constrain costs.

The decline in PPS margins makes the distribution of Medicare payments ever more important, since the gap between hospitals that do well under PPS and those that do not is growing wider.

As PPS margins fall, however, total margins are stable and even slightly higher than they have been. Hospitals have been able to generate enough revenues to cover their expenses by raising their charges to private payers. How long this cost shifting can continue—and its ramifications for the insurance industry, hospitals, government, and individuals—is a question that is causing increasing concern in both the public and private sectors.

ProPAC will continue to address these concerns in three ways. First, by monitoring trends in both Medicare and other payers' payments and costs. Second, by addressing policy issues that are relevant to Medicare payment for hospitals and other facility-based providers. Finally, ProPAC will continue to examine the connections between Medicare payment policy and the broader issues that affect the health care sector and society as a whole.

Notes to Chapter 2

1. Hospitals are classified as large urban if they are located in a metropolitan statistical area, or MSA, with a population of more than 1 million. The other urban classification includes all hospitals located in an MSA with a population of 1 million or fewer. Rural hospitals are located outside of any MSA.

2. The differential between the rural and other urban standardized payment amounts is being reduced and is scheduled to be eliminated by fiscal year 1995.

3. These figures are based on unpublished estimates prepared by the Congressional Budget Office in February 1992.

4. Although outlier payments are expected to account for only 4.7 percent of total PPS payments, this does not mean that hospitals will have been underpaid. The reduction in the standardized payment amounts is based on the assumption that outlier payments will be 5.1 percent of basic DRG payments plus outlier payments—that is, excluding indirect medical education and disproportionate share payments. ProPAC estimates that outlier payments will be 5.2 percent of DRG plus outlier payments in fiscal year 1992.

5. Under the transition policy adopted in implementing PPS, payments in the first through fourth years were based on a changing blend of hospital-specific, regional, and national rates. To isolate the impact of policy changes from the effects of the transition, the estimates presented reflect the impact of policy changes on the national payment rates only. Moreover, the policies in effect at the end of each fiscal year (including any policies adopted during the year) are treated as if they were in effect throughout the year. Although this approach does not measure the actual changes in payments that occurred, it gives a better picture of the ultimate impact of each policy change once it is fully implemented.

6. The percentage changes discussed here are not estimates of changes in actual PPS payments. Per-case payment rates were simulated under the policies in effect during each of the first nine years of PPS, holding case mix constant. All changes were assumed to have been in effect for the entire fiscal year in which they were implemented. The precise effect of the combination of these and other simplifying assumptions has not been estimated, but it is unlikely to distort the general conclusions of the analysis.

7. While the average update factor for fiscal year 1990 was 6.0 percent (after January 1, 1990), this was offset by a 1.22 percent reduction in all DRG weights. Therefore, payment rates for this period increased by an average of 4.72 percent.

8. In all analyses and tables in this chapter, hospitals are considered to be rural hospitals on the basis of their geographic location rather than on their payment status. Thus, facilities that have been reclassified for payment purposes are still counted among rural hospitals. Any increase in payments resulting from such reclassification is considered an increase in payments to rural hospitals.

9. The data on CMI change shown in Table 2-4 are adjusted to compensate for the 1.22 percent across-the-board reduction in the DRG relative weights for fiscal year 1990. The actual CMI for all hospitals in fiscal year 1990 was 1.0 percent higher than in fiscal year 1989, but the adjusted percentage change of 2.2 percent better reflects the change in the average severity of illness.

10. A ProPAC analysis of these hospitals found, however, that only 207 of 451 qualifying hospitals included in the study actually receive additional payments under the OBRA 1989 provision. The effect on each hospital receiving the additional payments is correspondingly greater.

11. The Medicare Cost Report data presented in this report may differ from data in previous reports due to the availability of more current information and minor changes in editing procedures.

12. In all tables in this chapter, hospital groups are defined by hospitals' current (fiscal year

1992) characteristics; that is, the rural disproportionate share hospital category includes all hospitals that are located in rural areas and are currently qualified for DSH payments. Thus, for example, even though there were no disproportionate share hospitals in fiscal year 1985, the statistics for that year correspond to the hospitals that now receive DSH payments. This approach was adopted to avoid the difficulty in interpretation that would result from having hospitals in a given group vary from year to year in the tables.

13. ProPAC measured skill mix for 28 hospital labor categories, using average salary levels (estimated primarily from Bureau of Labor Statistics survey data) to represent relative skill levels.

14. These data are from the American Hospital Association National Hospital Panel Survey.

15. Note that the term "intensity" is used differently in Chapter 2 than in Chapter 1. In Chapter 1, intensity referred to the change in costs that is unexplained after controlling for inflation, population growth, and changes in utilization. In this chapter, intensity is defined more precisely as a measure of the number and type of intermediate services used to produce an inpatient hospital stay. For further discussion of the Commission's productivity measures and their limitations, as well as the data sources for the analysis, see ProPAC's March 1992 *Report and Recommendations to the Congress.*

16. "Decline in California rating results in downgradings of 76 hospitals' bonds," *Modern Healthcare* 22(2):5, January 13, 1992.

17. Real expenses and revenues in each year are dollar values adjusted by the U.S. Department of Commerce's gross domestic product implicit price deflator, which reflects the general level of prices for goods and services produced in the domestic economy during the year. Adjusted admissions is an indicator of the overall workload of each hospital, measured by taking a weighted sum of admissions and outpatient visits.

Chapter 3

Winning and Losing Hospitals Under PPS

Chapter 3

Winning and Losing Hospitals Under PPS

As part of its responsibility to monitor the effects of Medicare's prospective payment system (PPS), the Prospective Payment Assessment Commission (ProPAC) has had a longstanding interest in understanding more about financial performance and how hospitals respond to PPS incentives. By identifying the factors that influence performance, the Commission can begin to determine why some hospitals do better than others. This information is important to confirm any possible biases in PPS and to identify any performance-related factors beyond hospitals' control that the payment system design does not recognize. To improve the equity and adequacy of PPS, these features warrant future consideration.

A hospital's financial performance is shaped by many interacting forces. External environments provide the backdrop for all hospitals, creating opportunities as well as imposing constraints on hospital management. PPS design features affect performance by determining which hospital costs will be covered and the extent of this coverage. Hospital characteristics also have an impact on performance by defining options available to administrators. Management actions determine how hospitals respond to their environments and to the prospective payment system.

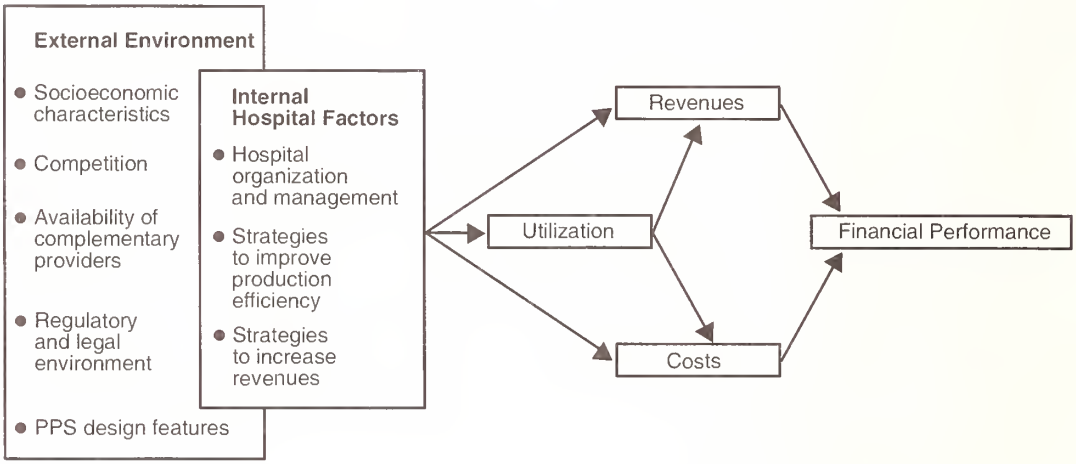
This year, the Commission is reporting on two complementary studies of hospital financial performance under Medicare's PPS. First, ProPAC completed an in-depth statistical analysis of the numerous factors associated with doing well or poorly under PPS. This multivariate work was aimed at identifying important factors in hospitals' external environments, PPS design features, and hospital characteristics that are associated with performance. Second, a series of case studies were undertaken to broaden understanding of hospital internal factors, such as the role of management and the medical staff, that are not readily measurable using secondary data sources.[1] Together, the studies tried to assess whether performance is indeed within a hospital's control and, if so, how hospital strategies affect performance.

In interpreting the studies' results, several caveats must be kept in mind. Even though the studies identified factors associated with good and poor performance, they did not assess the relative importance of the external environment, PPS design features, or management. Nor did they examine the conditions under which specific hospital actions improved performance. Therefore, the studies are not prescriptive. Finally, because they focused on hospital performance under PPS, the studies did not address the relationship between these factors and hospitals' overall financial condition.

Both the case studies and the multivariate analysis assume that although all hospitals face the same incentives under PPS, their responses—and the consequences of these responses—may differ for many reasons. Most hospitals pursue multiple organizational objectives: treating patients, serving their communities, training physicians, and generating profits or revenues. Further, hospitals' internal characteristics and management strategies, many of which are shaped by the outside environment, also determine their performance. These forces in turn influence costs or revenues, either directly or indirectly through their effect on utilization (see Figure 3.1).

The studies were designed to distinguish those factors over which hospitals have little control (external environment and payment system design) from those over which they have some control (internal characteristics and management strategies). This distinction, however, is not always clear. For instance, since a hospital's environment affects both the range of services it offers and its available resources, the environment also influences hospital

Figure 3-1. The Relationship of External Environment, Internal Hospital Factors, and Performance Measures



SOURCE: Adapted from Lewin-ICF, *An Examination of Winners and Losers Under Medicare's Prospective Payment System: Final Report*, ProPAC Extramural Technical Report No. E-92-02, May 1992, Figure 2.1.

characteristics. Similarly, several payment design features are based on hospital characteristics.

The studies found that the external environment, the design features of PPS, and the hospital's internal characteristics each played a role in whether the hospital did well or poorly under PPS. While hospitals that did poorly were more likely to face tougher external environments, they were further differentiated from winning hospitals by their reactions to outside conditions. They tended to consider their external environments as fixed, whereas hospitals that did well attempted to exert as much control as possible over outside forces. Although certain PPS design features—teaching and disproportionate share (DSH) status, for instance—advantaged hospitals, no single payment feature determined financial performance. Finally, factors such as labor costs and productivity, the role of the medical staff, and physician-management relations, which were under management's control, distinguished hospitals that did well from those that did poorly under PPS. Given a set of external circumstances and PPS design features, better managed hospitals were likely to outperform their more poorly managed counterparts.

The following discussion briefly describes the methodologies used in each study. Next, the findings from both studies are summarized under the three major topics: the external environment, PPS design features, and internal hospital characteristics. A final section discusses the interrelated nature of many of the findings and the conclusions that may be drawn.

DESCRIPTION OF THE STUDIES

Each study examined the best and worst performers under PPS as defined using PPS margins. In both studies, the best performers, or winning hospitals, were in the top 25 percent of the distribution of PPS margins in the third through fifth years of PPS.[2] Their average PPS margins ranged from 18 percent to 22 percent during the three-year study period. Conversely, the worst performers, or losing hospitals, were in the bottom quartile of the distribution of PPS margins for each year of the same period. PPS margins ranged from –9 percent to –24 percent for urban hospitals and from –23 percent to –33 percent for rural hospitals.

The definitions of winning and losing hospitals were based on consistent performance from 1986 through 1988: One year of extraordinary profits or losses did not qualify any hospital as winning or losing. This criterion increased the likelihood that differences between good and poor performance

were observable and that year-to-year fluctuations in accounting or other transitory factors were disregarded. Winning and losing were defined relative to the performance of all hospitals. Thus, the definitions do not imply correct or acceptable margin levels. Further, the designation of winning or losing should not be interpreted as indicative of desirable hospital characteristics or behavior. Actions taken by hospitals to improve their financial performance may be inconsistent with broader social objectives, such as controlling total health care expenditures.

The definitions of winning and losing do not describe the overall financial health of the hospitals because outpatient and non-patient endeavors or non-Medicare activity are not taken into account. Individual hospital performance under PPS is related to overall financial performance; most hospitals that do well under PPS tend to do well generally. There are some exceptions across hospital groups, principally teaching and disproportionate share hospitals. Within a given hospital group, Medicare shares, payer mix, and level of payments by other payers directly affect total margins.

The period covered by the studies excluded the early years of high industry profits after PPS implementation. It also excluded the years of aggregate negative PPS margins, following the fifth year of PPS. Since 1986, the best performers experienced relatively small reductions in their PPS margins; the average and below-average performers faced larger declines. Finally, the period predated recent changes in Medicare payment policy. For instance, the dramatic reallocations of funds resulting from the geographic reclassifications that occurred in fiscal year 1992 are not reflected. Nor do the studies account for the effects of important policy changes for rural and disproportionate share hospitals mandated in the Omnibus Budget Reconciliation Acts (OBRA) of 1989 and 1990. Thus, the results may not accurately mirror the conditions hospitals currently face.

Differences in the results of the case studies and the multivariate analysis occurred for various reasons. First, the case studies did not represent all hospitals because the sample was too small. When comparing identical measures like changes in population, it is possible that the results observed for a hospital sample differed from the industry at large. Second, the statistical analysis used county or metropolitan statistical area (MSA) data, whereas the case studies described conditions specific to a more locally defined geographic area. Third, better measures of economic conditions could be obtained in the case studies but were unavailable in the secondary data used in the statistical analysis. Fourth, the studies used different reference groups; this may explain varying results for identical measures. The case studies compared winning with losing hospitals, whereas the multivariate analysis compared winning or losing hospitals to a middle group. Thus, for instance, insignificant differences between winning and losing hospitals and the middle group could still mean that winning hospitals differed significantly from losing ones. Last, some measures examined in the case studies were hospital-reported and may reflect subjective perceptions of a particular characteristic.

Each study had particular limitations that affect the interpretation of the results. The statistical analysis describes patterns of behavior but not how or why certain characteristics were associated with performance. Further, many important hospital internal factors could not be captured in measures used in this study. By contrast, the case studies emphasized the specific strategies managers pursued and the characteristics of hospitals' local environments that might influence performance. Although the case studies explain how and why certain hospital characteristics are associated with performance, the findings cannot be generalized to all hospitals. Additionally, the case studies did not examine the impact of PPS design features on performance. By design, they did not assess specific hospital strategies or examine whether certain strategies would be successful under particular conditions. Although the findings are informative, they should not be considered prescriptive for hospitals. In sum, while the statistical analysis and case studies are complementary and should be considered together, they cannot be used to assess the relative contributions of external environment, payment policy, and management to hospital performance under PPS.

The Multivariate Analysis

The multivariate analysis attempted to identify the design features of PPS and the environmental and

hospital characteristics associated with winning and losing under PPS. The relative importance of factors included in the analysis was also assessed. The analysis estimated the probability of being a winning or losing hospital but did not predict specific hospital margins.[3] It described patterns of behavior but could not determine how or why certain factors were associated with good or poor performance.

The performance of rural and urban hospitals was examined separately. Because the structure of costs and the scale of operations generally differ for urban and rural hospitals, the factors associated with financial performance were also assumed to differ. Likewise, winning and losing hospitals were analyzed separately and compared with a middle performance group Factors associated with winning were not assumed to be the converse of those associated with losing. Even if some of the factors were the same for winning and losing, the magnitude of each factor's effect may differ.

The Case Studies

Case studies were conducted on 10 pairs of winning and losing hospitals. Winning and losing hospitals were matched by PPS payment characteristics (teaching and disproportionate share status), size, ownership, and location (urban or rural).[4] Seven pairs of urban hospitals and three pairs of rural hospitals were chosen to reflect the Medicare discharges and payments in each location. The pairing allowed comparisons across similar hospitals to highlight characteristics that affect performance. To make the results as representative as possible, pairs were selected from the hospital groups with the most hospitals.

Where feasible, urban hospitals were paired within the same city. All hospitals were matched within the same state to control for state-specific factors that establish the regulatory and resource environment within which the hospitals operate. Potential matches were also examined for similarity in Medicare share, occupancy rates, and case mix.

The case studies examined the hospitals' internal characteristics, management strategies, and responses to PPS. Differences related to key payment factors, hospital size and ownership, and location were controlled in each pair. The study design was fashioned to uncover more subtle differences in management, organization, and strategies. The relative importance of management vis-à-vis other factors could not be determined. This is because PPS payment factors were controlled between the pairs. Thus, the relative roles of management, external environment, and payment factors could not be assessed.

ENVIRONMENTAL FACTORS AFFECTING PERFORMANCE

The external environment sets the stage for hospital operations by defining the resources available in the community, the number of competing providers, and the methods used to pay hospitals. Many external factors directly influence patient volume, which in turn affects the revenues hospitals receive and the costs per case. Under a per-case payment system using national rates, hospitals with higher volumes are advantaged because, holding service and case mix constant, they will tend to have lower costs per case. Socioeconomic conditions in the area where the hospital is located, such as median income and unemployment rates, influence the demand for services. The degree of competition with other area hospitals affects market share, recruitment of personnel, and the ability to acquire capital. The availability of post-acute services and professional personnel influence a hospital's production efficiency. Finally, the regulatory environment plays an important role in determining hospital financial conditions.

Both the statistical analysis and case studies revealed that losing hospitals, particularly rural ones, faced tougher external environments than winning hospitals (see Table 3-1). In the case studies, the responses to the external environment differed markedly among winning and losing hospitals. Winning hospitals were more likely to attempt to influence what appeared to be fixed constraints presented by external factors. Management responses to competitive pressures and—in the case of outlying urban and rural hospitals, the lack of physicians—were more effective for winning compared with losing hospitals. The case studies revealed the significance of such responses in a competitive environment. Often, what separated a winning hospital from a losing one was not the strategy per se but whether it suited the conditions facing the hospital.

Table 3-1. Characteristics of the External Environment of Winning, Middle, and Losing Hospitals

Characteristics	Rural			Urban		
	Losing	Middle	Winning	Losing	Middle	Winning
Number of Hospitals	223	1,699	206	284	1,812	301
High degree of competition (rural)	19%	9%	8%	--	--	--
Low degree of competition (urban)	--	--	--	60%	77%	80%
High unemployment rate	15	14	19	4	4	4
High nursing home beds per capita (urban)	--	--	--	16	26	28
Low nursing home beds per capita	32	25	21	36	24	20
Frontier county location (rural)	17	12	11	--	--	--
Low general practitioners per capita (rural)	26	26	18	--	--	--
Low surgeons per capita (rural)	35	24	21	--	--	--
Central city location (urban)	--	--	--	51	41	39
Located in all-payer state (urban)	--	--	--	5	9	20

SOURCE: ProPAC analysis.

Socioeconomic Factors

The multivariate analysis showed no significant relationship between performance and several socioeconomic characteristics of the areas where the hospitals were located (see Tables 3-2 and 3-3). However, the cases studies revealed some notable differences between winning and losing hospitals. Variations in socioeconomic conditions were found because the immediate local environment of even the best matched pairs differed from the larger areas used for matching. These "micro-environments" determined many aspects of the operating conditions important for performance, such as payer mix and resource availability. Had it been possible to control for location more precisely, differences in these conditions would not have been observed.

Losing hospitals tended to be in areas with declining industries and deteriorating or stagnating economies. These factors limited the losing hospitals' ability to attract patients and retain physicians. Winning hospitals. by contrast, tended to be located in areas with more vigorous economies.

Winning case study hospitals also tended to be located in areas with more population growth than were their losing counterparts. Two of the winning hospitals were situated in areas that had experienced large population growth during the study period. Interestingly, it appeared easier for hospitals to increase volume by maintaining market share in a growing area than to take away market share from another hospital. Furthermore, many hospitals were affected by the industrywide trends in declining inpatient utilization and major growth in outpatient volume. Strategies to address these trends—and the intensity with which they were pursued—differentiated the winning from the losing hospitals. For example, winning hospitals were more likely to develop their own outpatient centers and to seek physicians and managed care contracts aggressively. These strategies are discussed in a later section on hospital internal factors and performance.

While uncompensated care costs directly affect total margins, performance under PPS may also be lowered by the indirect effect of these costs on volume. Hospitals with large uncompensated care loads often used their resources to subsidize charity care instead of developing programs that would attract physicians and patients and in turn lower costs per case.

Table 3-2. Factors Associated with Rural Hospital Performance: Results of the Multivariate Analysis

Winning Hospitals	Losing Hospitals
External Environment	
No scarcity of general practitioners per capita	Low nursing home beds per capita
No scarcity of surgeons per capita	
No scarcity of nursing home beds per capita	
PPS Design Features	
Large (rural referral centers)	High proportion of outlier cases
High proportion of cases transferred in	Low case-mix index (1988)
	Not large (not a rural referral center)
Internal Factors	
High initial productivity (1985)*	Low initial productivity (1985)*
Wages initially lower than area wage index (1984)	Small increase in productivity (1985-1988)
Skilled nursing facility unit	Less likely to have a skilled nursing facility unit
Small change in wages relative to area wage index (1984-1988)	Wages initially higher than area wage index (1984)
High occupancy rate	Less likely to be for-profit
Less likely to have high capital costs as a proportion of total costs	High capital costs as a proportion of total costs
More likely to have swing beds	Less likely to have a rehabilitation unit
	More likely to have swing beds

Note: Factors are ranked by relative importance within major category. Because winning and losing hospitals were examined separately, factors significant for winning hospitals were not necessarily significant for losing hospitals and vice versa.

*Case-mix adjusted admissions per full-time equivalent.

SOURCE: ProPAC analysis.

Even given socioeconomic conditions that hospitals can do very little to change, the case studies indicated that some can circumvent the environment in which they operate. In one case, the winning hospital established "feeder" satellite clinics to bring well-insured patients into its inner-city location. In another example, a local competitor circumvented its external environment by moving to the suburbs, with significant negative effects for the losing hospital that was left behind to operate in an underinsured and uninsured market.

Area Competition

The multivariate analysis did not reveal a relationship between the number of competitors and performance, with the exception that competition affected occupancy. However, the case studies found that hospitals located in more competitive areas had poorer financial performance. This disparity in the findings may reflect the difference in the measures of competition used. The multivariate analysis considered only the hospital's proportion of admissions from its area. The case studies considered the presence of both non-hospital and hospital competitors in a given market area. In addition, the case studies could not completely separate the effects of competition and occupancy. Further, as discussed previously, the case studies cannot represent the entire hospital industry, so differences may be observed. Finally, the two studies used different comparison groups.

The losing hospitals in the case studies were located in more competitive environments than the winning hospitals were. Because there were more hospitals and ambulatory care facilities, it was harder for losing hospitals to maintain or increase volume. Interestingly, physicians at both winning and losing hospitals established surgicenters and other service centers that competed directly with the case study hospitals. Rural hospitals with swing-bed or skilled nursing facility (SNF) units faced additional competition from nursing homes in the area. In one urban pair, the losing hospital had built a second hospital to ward off competitors. While perhaps a sound long-term strategy, this considerably lowered utilization of the parent hospital and led to its poor current performance.

Table 3-3. Factors Associated with Urban Hospital Performance: Results of the Multivariate Analysis

Winning Hospitals	Losing Hospitals
External Environment	
Located in all-payer state	Not located in all-payer state
	Low nursing home beds per capita
PPS Design Features	
Large teaching program	Small or no teaching program
Low proportion of outlier cases	High proportion of outlier cases
Disproportionate share payments for hospitals < 100 beds	Low case-mix index (1984)
High case-mix index (1984)	Lack of disproportionate share payments to hospitals > 100 beds
Disproportionate share payments for hospitals > 100 beds	
Did not have a high proportion of outlier cases	
Internal Factors	
High initial productivity (1985)[a]	Low initial productivity (1985)[a]
Wages initially lower than area wage index (1984)	Large change in wages relative to area wage index (1984-1988)
Small change in wages relative to area wage index (1984-1988)	Wages initially higher than area wage index (1984)
Large increase in productivity (1984-1988)	Offers specialized services[b]
Offers specialized services[b]	Does not offer alternative care services[c]
High occupancy rate	Low occupancy rate
	High capital costs as a proportion of total costs

Note: Factors are ranked by relative importance within major category. Because winning and losing hospitals were examined separately, factors significant for winning hospitals were not necessarily significant for losing hospitals and vice versa.

[a] Case-mix adjusted admissions per full-time equivalent.

[b] Special services include burn care, neonatal intensive care, and transplant.

[c] Alternative care services include home care, hospice, and skilled nursing.

SOURCE: ProPAC analysis.

Finally, the presence of health maintenance organizations (HMOs) created both a competitive challenge to and an opportunity for the case study hospitals. If secured, managed care contracts guaranteed volume for a hospital. One hospital successfully developed an affiliated HMO network that played a key role in maintaining its volume. On the other hand, for hospitals that could not secure HMO contracts, the loss of these potential admissions seriously affected performance. This was particularly important where commuting patterns and urban-based HMOs drained smaller urban and adjacent rural areas of local admissions.

Availability of Complementary Providers

The availability of physicians, nurses, and other technical workers can affect hospital performance by helping to ensure admissions and a range of services to attract patients. Scarcity of hospital staff can create the need to spend more time on recruiting and more money on retaining staff, thereby diverting administration attention from other management issues.

Both studies found that rural winning hospitals were less likely than losing hospitals to be hampered by physician shortages in their area, indicating that physician supply is key to rural hospital success. Reflecting the relationship between physician supply and performance, recruitment was an important activity for management in both rural and urban hospitals. Particularly at outlying urban and rural facilities, management attempted to attract physicians and patients by developing contracts for emergency room coverage and providing space for part-time specialists from large urban areas.

The case studies also examined the effect of nursing and other technical personnel shortages on

performance. They showed that losing hospitals were more likely to report area personnel shortages and to use contract nurses. Shortages contributed to performance in all of the pairs by driving up wages and increasing the costs of recruiting and training. In addition, productivity was affected because contract nurses were less familiar with the hospital's operations and less committed to the hospital's performance.

Winning hospitals were distinguished by their responses to reported shortages of professional personnel in their external environments. These hospitals attempted to combat shortages through aggressive recruiting (including the establishment of internships for trainees), higher wages and benefits, and more flexible work schedules. As a result, winning hospitals reported lower use of more expensive contract personnel. Losing hospitals generally did not take constructive action to address the shortages. Poor physician-nurse relations in several of the losing hospitals, along with less aggressive recruiting, increased turnover rates and the use of agency nurses.

The presence of post-acute services such as nursing home and rehabilitation services may also improve performance by lowering length of stay and costs per case. Although nursing homes compete with hospitals having SNF or swing-bed units, they represent complementary providers for other hospitals. Hospitals with poorer access to these services may have difficulty discharging patients and thus controlling length of stay.

The multivariate analysis found that losing hospitals were more likely to be located in areas with low nursing home beds per capita. Likewise, location in a rural area with high nursing home beds per capita increased the chances of doing well. In the case studies, administrators at winning hospitals indicated that good access to nursing home beds—either operated by the hospital or located in the community— helped them shorten their lengths of stay. As discussed later, however, hospitals developed their own SNF capacity for several reasons, only one of which was to improve access to SNF care.

Regulatory Environment

The multivariate analysis revealed that urban hospitals located in all-payer states were more likely than other facilities to be winning hospitals.[5] Similarly, rural hospitals were more likely to be winning and less likely to be losing hospitals when they were located in states with regulatory programs that established payment rates for all third parties (all-payer states). It is not known if these payment systems are related to winning because they establish an environment of cost containment, limit the revenues available for hospitals to spend, or provide payments for charity care.

The case studies could not explore many differences between winning and losing hospitals that were associated with differences in regulatory environments because the pairs were in the same state. The process of identifying pairs, however, indicated that the proportion of winning and losing hospitals varies considerably by state. Some states have far fewer winning hospitals than would be expected, while others have more. Further research is necessary to explain why the distribution of winning and losing hospitals varies by state.

The case studies, however, revealed two interesting findings related to external environment and performance. First, the Certificate of Need (CON) application and approval process some states require can improve hospitals' strategic planning. One hospital reported that the detailed capital project review required by the state's CON program—and the changes resulting from the review—may have contributed to the hospital's winning performance. The review revealed that the replacement project was not financially viable and suggested that the addition of a SNF unit would make the project feasible. Subsequently, the hospital built the unit, which was a factor in explaining its financial success compared with its losing counterpart.

Second, administrators at case study hospitals did not mention the different payment rates and methods employed by various payers, although pervasive at these hospitals, in describing the practices at the hospital. Some of the hospitals received per diem payments from Medicaid during the study period. Others received per diem payments subject to a limit on covered days. Most hospitals were paid charges or discounted charges by their private payers during the period. Despite the recognized different incentives these payment methods created, managers and physicians reported that they did not consider these in treating patients.

PPS DESIGN FEATURES

The design of the Medicare prospective payment system directly affects hospital financial performance. It rewards hospitals with low costs and penalizes those that do not keep their costs below payments. Further, certain PPS adjustments are made to account for cost differences beyond the hospital's control. If these adjustments are inaccurate, some hospitals may be disadvantaged. For example, if the area wage indexes do not adequately recognize actual hospital labor market areas, hospitals may be disadvantaged. Other adjustments under PPS, such as the indirect medical education adjustment, explicitly overcompensate hospitals for their associated costs. Hospitals that receive teaching payments are likely to be advantaged under PPS (see Table 3-4).

As mentioned previously, to the extent that hospitals were successfully matched, the case studies were not designed to highlight performance differences due to PPS design. The multivariate work, however, illuminated the importance of these payment features to winning and losing. Therefore, the material in this section refers to the multivariate study; examples from the case studies are specifically indicated.

Several PPS design features were associated with winning, including the teaching and DSH adjustments, high case-mix indexes, and rural referral center status (see Tables 3-2 and 3-3). Having a high proportion of outliers (cases with extremely long lengths of stay or extraordinarily high costs) was associated with poor performance under PPS. Generally, however, PPS adjustments were not the deciding factor governing performance. For example, a few major teaching hospitals and rural referral centers lost under PPS.

Adjustments for Location

The prospective payment system accounts for differences in hospital location through the area wage index (AWI) and the different standardized amounts for large urban (population greater than 1 million), other urban (population under 1 million), and rural location. If the wage index accurately reflects area differences in labor costs, its affect on performance should be neutral. The multivariate analysis found that the level of the wage index was not associated with winning or losing under PPS. However, the difference between a hospital's labor costs and its assigned area wage index was quite important. Hospitals with labor costs below the area wage index were more likely to do well, whereas those with costs higher than their AWI were more likely to lose. This difference may be within the control of

Table 3-4. Hospital Characteristics That Affect PPS Payments

	Rural			Urban		
Characteristics	Losing	Middle	Winning	Losing	Middle	Winning
Number of hospitals	223	1,699	206	284	1,812	301
Frequencies						
<100 beds and disproportionate share (urban)	--	--	--	5%	3%	6%
>100 beds and disproportionate share (urban)	--	--	--	28	37	52
Sole community hospital (rural)	18%	14%	16%	--	--	--
High proportion of outlier cases	16	10	6	64	47	40
Low proportion of outlier cases (urban)	--	--	--	19	24	39
High proportion of cases transferred in	23	25	30	22	25	31
High proportion of cases transferred out	34	24	23	33	24	23
Located in MSA >1 million (urban)	--	--	--	60	48	46
Mean values of variables						
Ratio of interns and residents per bed	--	--	--	.02	.05	.11
Wage index (1988)	.81	.82	.81	1.01	1.02	1.05
Case-mix index (1988)	1.05	1.09	1.08	1.21	1.26	1.29

Note: MSA = metropolitan statistical area.

SOURCE: ProPAC analysis.

hospital managements to the extent that administrators can set employees' wages. However, labor costs that are higher or lower than the AWI may not be within a hospital's control if they reflect problems in the index. Such problems include the inadequacy of the current definitions of hospital labor market areas or the delays in updating the index. In the case studies, for example, one hospital located in a rural area of a large urban county benefited because its costs were lower than the urban hospitals in the county.

Additionally, the case studies indicated that some hospitals were unaware of how they were paid under the AWI used in the payment system. A number of hospitals reported having higher wages than others in the assigned AWI area, while the Health Care Financing Administration (HCFA) wage surveys revealed that these hospitals actually had lower wages. In addition, some of the losing case study hospitals reported being disadvantaged by the exclusion of contract labor from the calculation of the area wage index. It is not clear whether the use of contract labor reflected personnel shortages in the area or poor management practices by some hospitals. Further, because the inclusion of contract labor costs would affect the AWI only under unusual circumstances, this perception may represent another misunderstanding of the index.

Hospitals in large urban areas are paid a higher base amount for the same case than hospitals in other urban areas. Hospitals in large urban areas did not appear to be advantaged or disadvantaged under PPS compared with hospitals in other urban areas.

At the time of this study, all rural hospitals except rural referral centers (RRCs) were paid a lower base amount for the same case than other hospitals. The performance of rural hospitals was not directly compared with that of urban hospitals in these studies. However, it appears that some rural hospitals performed as well as the winning urban hospitals.

Adjustments for Hospital Characteristics

Under PPS, payments vary to account for differences in the indirect and direct costs for teaching programs, the number of low-income patients, and the type of facility—sole community hospitals (SCHs) and rural referral centers. These payment adjustments apply to every case at the hospital. To the extent that payments accurately reflect costs, no adjustment should benefit one group of hospitals over another.

The payments for the indirect costs of teaching programs are set higher than warranted simply by their costs. These higher payments recognize the Medicare program's commitment to ensuring access to care for Medicare beneficiaries. For urban hospitals, winning under PPS was strongly associated with teaching activity. Moreover, the case studies suggested that hospitals with larger than average teaching programs that received higher direct payments for teaching were also advantaged. Additionally, winning teaching hospitals reported better success in attracting residents, which in turn allowed these hospitals to maintain or increase their volume of cases.

DSH payments are higher than the associated costs of treating low-income patients. As a result, this adjustment was also correlated with winning under PPS for urban hospitals.

RRCs are paid the "other urban" standardized amount, a higher base payment than other rural hospitals. They also are larger, have higher patient volumes, and experienced smaller volume declines than other rural hospitals. The multivariate analysis indicated that rural referral centers were likelier to win and highly unlikely to lose under PPS. This suggests that the use of the other urban standardized amount overcompensated these hospitals, they were better managed, or they benefited from economies of scale.

During the study period, designated sole community hospitals received a blend of hospital-specific updated base year costs and the regional rate. The multivariate analysis found that SCH status was not associated with winning or losing under PPS. Other ProPAC studies found that sole community hospitals had divergent experiences under PPS.[6] The case studies suggested that this dual association with performance may be attributable to the arbitrary selection of the base year. One hospital, for example, became a PPS winner by virtue of unusually high costs in its base year. Its losing counterpart had low costs in the base year and was not similarly advantaged.

Adjustments at the Case Level

PPS also makes adjustments at the case level to reflect the costs of treating different types of patients. Case-level adjustments include the weight assigned to each diagnosis-related group (DRG) and special payment provisions for outlier cases and cases transferred from or to another facility.

The case-mix index is the average weight of the DRGs treated in a given hospital. The level of the index should be unrelated to performance if the weights for the DRGs are set appropriately. Performance for both rural and urban hospitals was strongly and positively associated with higher case-mix indexes. There are at least four possible explanations for this. First, hospitals with high case-mix indexes tended to treat more cases and may have benefited from economies of scale that were unmeasured by the controls for occupancy rate and admissions. Second, the weights may not have accurately reflected the relative differences in resource use across cases. Third, the index may have measured other differences between hospitals besides their mix of cases. Last, higher case-mix indexes could have indicated better medical records documentation and DRG coding that raised PPS payments but did not correspond to higher use of resources.

Outlier cases are extremely costly; by design their payments do not fully cover these costs. Having a high proportion of outlier payments was related to poor hospital performance. This suggests that outlier payment policies need to be improved. However, outlier payments are also associated with longer average lengths of stay and hospital location in the center of an MSA. Consequently, having a higher proportion of outlier payments may have characterized a group of high cost hospitals as well as indicated a problem in the design of PPS.

Hospitals with greater numbers of patients transferred in from other facilities appeared to be advantaged under PPS. This occurred even though costs for these cases typically exceeded payments. A high number of cases transferred from other facilities may be associated with other hospital characteristics that are related to winning.

INTERNAL FACTORS AFFECTING HOSPITAL PERFORMANCE

Among the internal factors affecting hospital performance are organization and management, the strategies used to improve production efficiency, and actions taken to increase revenues. Both studies confirmed the importance of strong management in shaping hospital performance. Factors within the control of hospital managers consistently explained much of the difference between the best and worst performance under PPS. The multivariate analysis indicated that staff productivity, labor costs, service mix, capital investment, and occupancy were associated with performance.

The case studies provided considerable detail about how successful hospitals were managed and how management differed at losing hospitals. Winning hospitals were more efficient at the onset of PPS and were more likely to undertake programs to improve their performance. Good relationships between their medical staffs and administration led to shared responsibility for the hospital's financial performance. These productive relationships enabled the hospital to undertake multiple strategies to improve production efficiency and generate revenues. Finally, the "fit" between their strategies and the resources available at the hospital and in their communities further differentiated winning hospitals from their losing counterparts.

Organization and Management

The case studies found that performance was related to many characteristics of a hospital's organization and management. Winning hospitals were more likely than losing ones to have long-standing traditions of cost containment, more effective management, strong medical staff leadership, and positive and productive relations between the medical staff and administration. They responded to the implementation of PPS with selective and sustained activities aimed at lowering their costs and increasing revenues. The statistical work also found that rural hospital performance was associated with ownership and size (see Table 3-5). As will become clear, many of these factors heavily influenced the strategies successfully pursued by the hospitals. Therefore, they should not be seen in

isolation; rather, they create a constellation of attributes and behavior that together characterize winning and losing hospitals.

Ownership and Size—The multivariate analysis showed that for urban hospitals, performance was unrelated to ownership (proprietary, not-for-profit, or public) (see Tables 3-2 and 3-3). However, rural proprietary hospitals were less likely to lose under PPS. It is not known if this finding reflected better management at proprietary hospitals or more careful decisions regarding location or closure.

Similarly, the multivariate work showed that hospital size, while not associated with the performance of urban hospitals, was a factor for rural ones. It is likely that for urban hospitals, size was sufficiently correlated with other factors, such as teaching status, so that this variable did not have an independent effect on performance.

Conversely, large rural hospitals were more likely to be winning hospitals and less likely to be losing hospitals. As discussed in the section on PPS design features, large rural hospitals are almost exclusively RRCs. It is not known whether this finding indicates that RRCs benefit from economies of scale for which the study did not control or are more efficient for other reasons. The case studies indicated that the operation of small rural hospitals can be quite fragile. One of the winning hospitals, for example, is currently having financial difficulties due to the unexpected deaths of two key admitting physicians.

Culture to Control Costs—In the case studies, winning hospitals consistently differed from losing ones by having longstanding commitments to cost containment. They tended to foster these activities both before PPS and in response to it. Also important for winning hospitals was the widespread awareness of the need to control costs, which permeated all levels of the hospital organization. The importance of conservative resource use was communicated by senior management and reinforced by the medical staff support. By contrast, even if a losing hospital had cost controls in place, these were undertaken only in response to poor performance.

One case study exemplifies the difference between winning and losing hospitals. At the losing hospital, the implementation of cost controls was hindered by multiple management layers that impeded decision making and by an overbearing medical staff that resisted change. At the winning hospital, on the other hand, cost containment was accepted by the board, middle management, and line employees. Multiple strategies had been implemented at varying levels of the hospital. In another pair, the winning hospital's cost containment activities had been in place since the 1970s but only recently implemented at the losing counterpart.

The case studies also found that strong hospital boards were not associated with winning but that weak boards were correlated with losing. In some instances, the boards of winning hospitals provided better expertise and fund-raising capabilities, though this was not uniformly true. Board members often had other interests in controlling hospital costs in addition to overseeing a fiscally sound institution. Some represented local businesses and wanted to ensure low-cost care to their communities and, more specifically, to their employees. Likewise, board members of public hospitals mentioned their reluctance to assess tax levies that might be required if costs were not kept in line with the revenues received.

Physician participation in board activities was not associated with winning or losing. All hospitals had physicians on their boards; what differed was their role. In some losing hospitals, the physicians had narrow and conflicting interests that kept the hospital from taking positive actions to improve performance.

Hospital Leadership—The case studies revealed that management played a key role in differentiating winning hospitals from losing hospitals. Management at winning hospitals had productive relations with their medical staffs, fully integrating physicians into the hospital's financial decision making. These relationships were facilitated by low turnover rates among senior managers. High turnover made it more difficult for losing hospitals to identify their weaknesses and take corrective actions on a sustained basis.

Winning and losing hospitals also differed in the perspectives and expertise of their leadership.

Table 3-5. Internal Characteristics of Winning, Middle, and Losing Hospitals

Characteristics	Rural			Urban		
	Losing	Middle	Winning	Losing	Middle	Winning
Number of hospitals	223	1,699	206	284	1,812	301
Frequencies						
JCAHO-accredited	47%	66%	66%	83%	89%	90%
Proprietary ownership	5	8	9	26	17	14
Public ownership	56	43	40	16	14	15
Small size	17	9	12	28	21	24
Large size	3	8	12	7	11	21
High occupancy rate	18	25	31	13	25	39
Low occupancy rate	43	24	16	42	23	21
Skilled nursing unit attached (rural)	18	25	35	--	--	--
Swing-bed unit (rural)	45	35	43	--	--	--
Distinct-part rehabilitation unit (rural)	18	29	32	--	--	--
Offers home care or hospice services (rural)	30	39	49	--	--	--
High change in case-mix index (1984-1988)	28	25	24	25	25	26
Low change in case-mix index (1984-1988)	31	24	26	32	24	23
High change in admissions (1984-1988)	7	9	14	--	--	--
Low change in admissions (1984-1988)	27	8	5	--	--	--
High ratio of capital to total costs	28	25	20	38	24	20
Low ratio of capital to total costs	28	25	25	25	24	28
Technical services offered (urban)[a]	--	--	--	77	85	88
Special services offered (urban)[b]	--	--	--	18	23	37
Other services offered (urban)[c]	--	--	--	54	64	65
Alternative care services offered (urban)[d]	--	--	--	26	43	53
Mean values of variables						
Hospital wage relative to area wage[e]	.90	.91	.90	.91	.92	.92
Change in relative hospital wage (1984-1988)[f]	1.05	1.04	1.03	1.09	1.06	1.04
Hospital LOS relative to national average (1984)[g]	.81	.82	.78	1.09	.99	.96
Change in LOS ratio (1984-1988)[h]	1.12	1.10	1.13	1.05	1.09	1.10
Labor productivity (1984)[i]	19.49	24.08	47.97	16.05	30.15	68.92
Change in productivity (1984-1988)	1.65	1.22	.97	1.11	1.37	1.82

Note: JCAHO = Joint Commission on the Accreditation of Healthcare Organizations; LOS = length of stay.

[a] Technical services include computerized axial tomography, magnetic resonance imaging, lithotripters, cardiac catheterization laboratories, intensive care units, or open-heart surgery program.

[b] Special services include burn care, neonatal intensive care, and transplant.

[c] Other services include occupational medicine, outpatient department, and rehabilitation.

[d] Alternative care services include home care, hospice, and skilled nursing.

[e] The wage index ratio is the hospital-specific wage index divided by the area wage index.

[f] The 1988 wage index ratio divided by the 1984 wage index ratio.

[g] Hospital length of stay relative to national average LOS, adjusted for case mix.

[h] Change in length of stay 1984-1988 relative to national average length of stay 1984-1988, adjusted for case mix.

[i] Case-mix adjusted admissions per full-time equivalent.

SOURCE: ProPAC analysis.

Leaders at winning hospitals appeared to be more innovative in their thinking and to have considered issues in their external environment. Their broader perspective included assessing community needs in defining their objectives and an interest in applying new approaches to old problems. In addition, their leaders better understood their hospitals' financial performance and the factors that drove it. Moreover, their efforts to improve performance were focused on specific activities that were given time

to prove their effectiveness. Strategies and priorities did not constantly shift in the search for quick solutions to systemic problems. Further, management at winning hospitals evaluated their progress in realizing their objectives. Having specific management objectives, evaluating them, and holding managers accountable for achieving them characterized winning senior management.

For smaller hospitals, the chief executive officer or the chief financial officer was not necessarily the person initiating hospital activities to improve performance under PPS. Rather, a key attending physician, the director of nursing, or a board member could successfully galvanize hospital efforts. Commitment to the hospital's success, rather than a specific job title, characterized this person's role in the organization.

Strong leadership appeared to be less important at small hospitals facing less complex internal and external environments than at their larger counterparts. Strengths in some of the areas noted above could compensate for weaknesses in others. One small winning hospital, for example, appeared to have weak cost controls and minimal involvement of its medical staff in financial issues. However, it had successfully diversified into SNF and substance abuse services, which compensated for its weaknesses. Without strong cost controls or broader medical staff involvement, it was unknown how long this hospital could maintain its sound financial performance.

Managements' Response to PPS—The case studies also showed that winning managements gave more priority and attention to responding to PPS than their losing counterparts and that these efforts persisted over time. Losing hospitals tended to ignore the advent of PPS either because they were afraid to alienate their physicians by instituting changes or they were confident that the transition to national rates would carry them financially. Some hospitals anticipated an increase in revenues per case under national rates, which reduced their incentive to control costs. One public hospital indicated that its tax revenues insulated it from experiencing the pinch of PPS.

For some hospitals, the ability to respond effectively to the incentives of PPS was undermined by the absence of a culture to control costs, less effective management, and weak leadership from the medical staff. Management at one losing hospital described resentment about the restrictions imposed by PPS and high turnover rates of senior managers and physicians as key reasons for its inability to respond to PPS on a sustained basis. Other losing hospitals responded to PPS several years after its implementation. Their responses were often initiated by new management and an imperative to turn around the hospital financially. These hospitals had difficulty giving up strategies successful under cost-based reimbursement. Major distractions, such as a merger or new facility construction, also diverted management attention and resources from responding to PPS.

Other hospitals mounted short-lived programs to educate their physicians and employees about PPS but did not sustain these activities. One hospital's educational programs and data sharing with physicians initially trimmed more than three days from its length of stay and increased its case-mix index by 25 percent. This burst of activity was sufficient to classify the hospital as winning in this study. However, by the time of the site visit, these educational efforts had been discontinued. This hospital is an illustration of one that dropped its programs once it had achieved a desired level of financial performance.

Many winning hospitals, however, sustained preexisting cost controls and implemented new programs—even if they were advantaged by the transition to national rates. Programs were developed to educate all levels of hospital employees about the payment system and its incentives. Winning managers selected specific strategies based on clinical and financial data, such as the targeting of high-volume DRGs, outlier cases, or specific physician practice patterns. Data gathering and reporting were given high priority, and this information was successfully used to inform physicians and administrators about the hospital's internal operations. Management also shifted resources to areas of the hospital that traditionally had not received much attention— medical records, utilization review, discharge planning, and quality assurance.

Role of the Medical Staff—The case studies also indicated that the medical staffs at winning hospitals were characterized by two features: strong physician leadership and a high degree of medical staff involvement in financial issues.

Strong leadership was defined not necessarily by the formal position of the medical director, but sometimes by one or more influential private physicians reconciling the interests of the medical staff and administration. In these latter cases, the salaried medical directors were often perceived as agents of the administration and were ineffective at promoting productive medical staff-administration relationships.

Strong leadership advocated a sense of shared economic risk for both administration and the medical staff, with the physicians accepting partial responsibility for the success of the hospital. It also promoted a peer review program that actively pursued more efficient use of resources. Further, strong leadership constantly sought ways to become even stronger. As a result, the administration delegated to medical staffs many financial decisions related to physician resource use, such as those regarding technology acquisition.

The activities at one winning hospital highlight the successful qualities of a medical staff. Annually, all physicians were asked about upcoming capital requirements. The physicians initiated a vigorous peer review process that included paid physician reviewers of medical records. Physicians were heavily involved in multidisciplinary task forces established to address specific problematic resource usage. Efforts to reduce the operating costs of routine clinical decisions, such as the drugs to make up the pharmacy formulary, the use of the intensive care unit (ICU), and the resources used in the surgical suites, were commonplace. Strong leadership was seen as key to appropriate peer review and effective mediation between the medical staff and administration.

The leadership style at losing hospitals was more variable but never characterized by progressive physician involvement in the financial issues of the hospital. Some losing hospitals had longstanding conflicts among their physicians, which prevented the development of strong physician leadership. Their perspectives remained fairly provincial over time, delineating and limiting the role that medical staff would play in hospital management. For instance, interviewees at one losing hospital noted that the lack of strong medical staff leadership made it difficult for units to become more efficient. Without physician representation and mediation with administration, resources like the ICU were overused, making access more difficult for all physicians and care more costly.

Relations Between Administration and the Medical Staff—One of the consistent findings of the case studies was that winning hospitals always had positive and productive relations between administration and the medical staff, and that such relationships were considered a priority. Management was perceived as effective and considerate of the interests of patients and physicians. Likewise, as noted above, physicians were involved in many hospital financial matters, particularly those that affected physicians' interests. This mutual interest broke down the more traditional divisions between administration and the medical staff. Financial decisions were not considered to be solely management's domain.

Management-physician relations at the losing hospitals were less productive and often adversarial. At one hospital, conflicts among the board, medical staff, and administration were frequent and highly publicized in the local newspaper. At another losing hospital, the medical staff engaged in tactics aimed at undermining the hospital's financial position, hoping to force a change of ownership. One month after the administration attempted to control costs by sharing cost information with physicians, physicians retaliated by increasing their use of expensive pharmaceuticals by 30 percent. In general, relations between the medical staff and administration, while not always so confrontational, lacked basic trust. Because management was perceived as not open or honest, it could not pursue strategies to either control costs or generate revenues. At one losing hospital, for example, the medical staff staunchly opposed the development of ambulatory sites. By contrast, its paired winning hospital overcame similar initial hesitation of its medical staff and successfully established several ambulatory care sites. These feeder clinics are now considered good for inpatient business and therefore in the physicians' interests.

Poor management-physician relations inhibited a losing hospital's capacity to recruit and retain new physicians—the key to volume maintenance. The case studies also underscore the fact that poor medical staff-administration relations are hard to

change. Even new administrations brought in to improve relations or to turn around an institution financially faced a difficult time overcoming long-standing conflicts. Inability to transform this key relationship undermined several losing hospitals' attempts to improve performance.

Losing hospitals were further disadvantaged by having less skilled management, higher turnover rates in administration, and more distractions from their broader operating environment. These factors hindered the development of strong administration-medical staff relations that could have provided the foundation for strategies to improve efficiency or generate revenues.

Strategies to Improve Production Efficiency

All hospitals attempted one or more of the following strategies to improve production efficiency: maintain or increase volume, shorten length of stay, develop post-acute services, increase staff productivity, plan and monitor resource use, and use information systems effectively. The multivariate analysis and the case studies found distinct differences between winning and losing hospitals in the breadth and effectiveness of strategies implemented to improve production efficiency. Winning hospitals were more likely to monitor resources closely, reduce lengths of stay, and increase patient volume. In addition, departments of new-found importance under PPS, such as utilization review and medical records, were given more resources and were more likely to involve physicians at winning hospitals. Their successful strategies were aided by more effective use of information than was the case at losing hospitals.

Volume and Occupancy—The case studies indicated that losing hospitals had larger volume declines than their winning counterparts. Although external factors played a role in three cases, internal factors generally were more important in explaining volume changes. For example, all hospitals were affected by the major technological changes that expanded the number and complexity of outpatient procedures and, to a lesser extent, reduced hospitalizations. Winning hospitals differed from losing hospitals in their responses to this general trend, using the following strategies: aggressive physician recruiting, the development of satellite "feeder" clinics, the procurement of managed care contracts, and new program development. The development of satellites expanded the hospitals' patient bases and offered opportunities to spread overhead costs. As mentioned previously, poor physician-administration relations and intra-medical staff conflicts undermined many losing hospitals' efforts to recruit and retain physicians, in turn inhibiting volume increases.

Rural hospitals pursued slightly different strategies to increase or maintain volume. For them, the development of nonacute services and the establishment of weekly or biweekly clinics staffed by physicians from outside their market areas were used to attract patients. These hospitals were also more likely to lease rather than purchase expensive technologies that would also generate volume.

The multivariate analysis did not demonstrate a relationship between performance and changes in volume. There are two reasons why the results varied between the case studies and the multivariate analysis. First, the comparison groups for the two studies differed. In cases where there were insignificant differences between the winning or losing hospitals and the middle group in the multivariate analysis, the winning hospitals could still be different from the losing hospitals. This, however, was not statistically tested. Second, occupancy rates were significantly related to winning and losing; when occupancy rates were excluded from the analysis, large declines in admissions increased the probability of being a losing hospital. Hospitals with low occupancy rates were almost twice as likely to be losing hospitals, whereas high-occupancy hospitals were almost twice as likely to be winning hospitals. Therefore, the volume effect may be confounded by the inclusion of occupancy in the analysis.

Length of Stay—The case studies showed that winning hospitals lowered their lengths of stay more effectively than their losing counterparts. They accomplished this by having more effective production and review processes in-house and higher physician participation in these activities. Specifically, winning hospitals appeared to lower both length of stay and the ratio of ICU to total days, thereby improving overall hospital efficiency. Winning hospitals had more effective discharge planning and utilization review, characterized by

interdepartmental collaboration and focused activities. Managers actively monitored length of stay and were held accountable for reducing it.

The case studies also indicated that physician involvement was an important component of successful activities to shorten length of stay and sustain the reduction. Winning hospitals had active physician participation and leadership focused on lowering length of stay. By contrast, physicians at losing hospitals tended to regard utilization review and discharge planning as impediments to their practices.

Interestingly, the case studies suggested that although the external availability of SNF beds influenced length of stay, internal factors were more important in explaining differences in length of stay between winning and losing hospitals. This result is not surprising given the small proportion of patients requiring placement in a SNF at the time of discharge.

The multivariate analysis investigated a different hypothesis regarding length of stay from the case studies. The analysis compared the hospital's actual length of stay with an "expected" length of stay had it treated every case at the national average length of stay for that DRG. Performance was not associated with either the expected length of stay at the beginning of PPS or the change in the expected length of stay between 1984 and 1988. The null result for the change variable may reflect the findings of the case studies. Winning hospitals had implemented programs prior to PPS and therefore did not need to change their behavior in response to it.

Post-Acute Services—Both studies found that hospitals also attempted to improve their production efficiency by developing or effectively using post-acute services, including SNF units, swing beds, and rehabilitation services. The case studies showed that post-acute services created multiple opportunities for hospitals, particularly for smaller institutions, because these units accounted for a large proportion of the total facility's resources. These services offered hospitals considerable flexibility in terms of using their physical plants and staff as well as allocating overhead costs. Given the declines in inpatient utilization, several hospitals turned to other services to use existing space and personnel more effectively. These units generated revenues, attracted patients, and enabled management to staff their services flexibly. In addition, many hospitals allocated a large portion of their overhead costs to these units, as will be discussed later. By allowing hospitals to shift overhead and staffing resources, reported acute care costs decreased, operating efficiencies increased, and performance improved.

The multivariate analysis confirmed this relationship between service mix and performance. Losing hospitals were less likely to have rehabilitation and skilled nursing facility services. Rural hospitals with SNFs were less than half as likely to be losing hospitals and more than twice as likely to be winning ones. Interestingly, though, home health and hospice services were not associated with performance. Winning and losing rural facilities were likelier to have swing-bed programs. One possible interpretation of this result is that only mature programs improve performance. Or, again, some other unmeasured hospital characteristic may explain this.

Staff Productivity—The multivariate work indicated that staff productivity was the most important feature associated with performance under PPS. Productivity (measured by full-time equivalents, or FTEs, per case-mix adjusted discharge) was positively associated with winning and inversely related to losing. In addition, winning hospitals were more likely to have improved their productivity. Therefore, the hospital's efficiency at the outset, as well as its ability to increase productivity, contributed to performance under PPS.

Case study hospitals repeatedly indicated the importance of staffing appropriately. Respondents at losing hospitals consistently commented that staffing levels were perceived to be excessive and could be decreased without compromising quality of care. Management's focus on FTEs, if at all present, was a relatively recent innovation. By contrast, respondents at winning hospitals indicated that their staffing levels were lean or about right and had been the target of longstanding activity by management. Rural winning hospitals often lowered their FTE count by shifting staff from acute to nonacute services rather than by reducing staff.

The use of layoffs versus attrition to reduce FTEs did not explain differences in performance.

Layoffs, however, always resulted in poorer employee morale and a lingering mistrust between senior management and lower-level employees.

Skill Mix—The multivariate analysis did not directly measure differences in skill mix between winning and losing hospitals. However, the results indicating that winning hospitals had lower initial labor costs and smaller increases in their labor costs may reflect differences in skill mix. That is, winning hospitals may have had a lower, and therefore less costly, skill mix. As previously discussed, these results may also reflect differences in abilities to control labor costs or problems with the wage index.

Several directors of nursing at the larger case study hospitals indicated that they carefully monitored the mix of registered nurses and other nursing personnel. At one site, the winning hospital had a lower ratio of registered nurses to total nursing staff. The losing hospital had recently adopted this strategy to improve its productivity. Generally, however, the case studies did not reveal skill mix differences between winning and losing hospitals.

Quality of Care—Differences in quality are hard to measure and detect readily. Understandably then, winning and losing hospitals were not distinguishable on this basis. Only one case study site had observable differences in the quality of care at the two hospitals. In the multivariate work accreditation—which captured several hospital characteristics besides the predominantly structural measures of quality—was not significantly related to performance.

Winning hospitals and losing hospitals differed in the degree of involvement of the medical staff in quality assurance activities. Physician and medical staff leadership more actively participated in quality assurance programs at winning hospitals. These activities were often considered an administrative burden at the losing hospitals.

Budgeting and Monitoring of Expenses—Winning hospitals had in place better planning, monitoring, and control systems. They were more likely to use flexible budgeting that set realistic target expenditures and revised these periodically throughout the year to reflect actual volume experience. By contrast, losing hospitals often built into their budgets inflationary incentives or indiscriminate across-the-board adjustments. For example, at one hospital, departments that overspent their budgets were given higher budgets the following year, negating any incentive to produce accurate budgets or to control expenditures.

Winning hospitals were also more likely to monitor their costs relative to peer institutions and to examine their costs and revenues by payer. Staffing levels and unit costs were also compared to industry norms. Managers were held accountable for achieving performance goals such as productivity standards.

In addition, winning hospitals were more likely to aggressively control input costs. Whereas most hospitals benefited from group purchasing, some winning hospitals pursued multiple group purchasing contracts and then played these against each other to obtain the lowest prices. Inventories were kept low and standardized with the assistance of the medical staff. Physicians, for example, were asked how to streamline the supplies they required and how surgical trays could be standardized across different surgery teams.

Finally, restrained investments in equipment helped to keep unit costs low. Furthermore, winning and losing hospitals differed in their ability to prioritize projects and see them through to completion. As with the lack of focused strategies to improve efficiency, management at losing hospitals was more likely to change strategies and the capital projects required to realize them. At one losing hospital, multiple construction sites at various stages of completion reflected shifting priorities. In general, winning hospitals were more likely to establish their goals and give the projects sufficient funds and attention to complete them.

Information Systems—The availability and sophistication of information systems did not differ for winning and losing hospitals. Nonetheless, the hospitals were markedly different in terms of how well they used the information generated from these systems. In eight of the 10 pairs, winning hospitals used the information more effectively than their losing counterparts. Winning hospitals consistently used data to improve clinical and financial outcomes and to monitor costs and lengths of stay.

Another key difference between winning and losing hospitals was the amount of information shared with physicians. For seven of the 10 winning hospitals, management regarded a high degree of information sharing as one successful way to engage physicians in joint financial responsibility for the hospital. For physicians, this was a way to increase their control over practice decisions that might otherwise be made by management or by third-party utilization review.

Strategies to Increase Revenues

Winning hospitals used an array of strategies successfully to increase revenues. These included aggressively recruiting physicians and other professional personnel, offering a variety of services and investing carefully in capital, improving the coding of their medical records, shifting costs to non-PPS areas of the hospital, and maximizing revenue from third parties.

Winning hospitals consistently developed services and technologies that fit the resources available at the hospital and in their communities. The development of post-acute services both increased revenues and improved production efficiency. These units were particularly important in rural areas, where stabilizing facility volume was more of an issue than in urban environments. For urban hospitals, technology-based or specialty services were not a panacea for hospital success; rather, success was a function of how appropriate the services were to the hospital's circumstances. More generally, the management of winning hospitals was uniformly more skilled at maximizing revenues under the payment system.

Whereas winning hospitals pursued various actions to generate revenues, losing hospitals were often not in a position to do so. Strategies to attract patients and physicians required investments in capital and programs that management did not have the resources or time to develop. Some losing hospitals were disadvantaged because their external environments presented significant distractions for management or left them without available resources. Others lost out because their competitors had already developed programs that met a community need, while still others were constrained by their mission or role in a multihospital system. The ability of hospitals to generate revenues, therefore, is a complex mix of the history of the institution, its local circumstances, the actions of other facilities in its market, the availability of resources, and timing.

Recruitment of Physicians and Other Personnel—The case studies showed that winning and losing hospitals differed in their recruiting efforts to attract physicians and other personnel. All rural hospitals in the case studies actively recruited physicians. However, as noted earlier, physician-administration relations were key features in a hospital's ability to attract new staff. Thus, hospitals with longstanding disputes among their physicians and between the medical staff and administration were less likely to recruit and retain physicians successfully. Perhaps reflecting these differences, losing hospitals were more likely to have hospital-led recruitment activities, while winning hospitals' recruiting efforts were more often headed by physicians.

As discussed previously, losing hospitals were less likely to recruit nurses and other professional personnel aggressively in areas with shortages. Winning hospitals attempted to exert some control over these external factors, whereas losing hospitals were more likely to hire agency nurses.

Availability of Services—To attract physicians and patients, many case study hospitals developed programs ranging from technology-based and specialty services to less capital intensive services such as post-acute SNF and swing-bed units. Rural hospitals that could not support full-time specialists established clinics to allow regular visiting specialists to see patients. What differentiated winning hospitals from losing hospitals was the appropriateness of services to the local circumstances. Winning hospitals selected services and programs that appeared to be well-suited to their institution and broader environment. They often were less likely to adopt new technologies, preferring to wait until the technologies were well-accepted as part of general practice. Losing hospitals' attempts were often poorer "fits" with the resources available in-house and in their communities.

The multivariate work found that both urban winning and losing hospitals offered specialty and technology-based services, reflecting the hospitals' relative abilities to support such services. In the

case of urban winning hospitals, these services improved performance. For urban losing hospitals, these services eroded performance because sufficient volume could not be generated to lower costs per case. Consistent with these results, the case studies did not find differences in the level of technology or amenities between winning and losing hospitals.

For less capital-intensive services, the multivariate analysis found that losing urban hospitals were less likely to offer alternative care services such as home care, hospice, and SNF. Likewise, losing rural hospitals were less likely to have SNF or rehabilitation units. As discussed earlier, the case studies showed that winning hospitals developed SNF units to generate revenues and improve efficiency. One of the losing hospitals erred in strategy when it sold its SNF—a decision that contributed to its poor performance. Several years later, it repurchased the SNF at a much higher price.

Capital Investments—More generally, both studies indicated that hospitals used capital investment as a way to compete for physicians and patients. Losing hospitals were more likely to make poor capital acquisition decisions, investing in services that could not be supported by sufficient volume. The case studies found instances of questionable capital investments by losing hospitals that undermined their performance. At one pair, the losing hospital attempted to attract patients and physicians by investing heavily in technology-based services. Because they were marginally utilized, these services increased operating costs per case well above those of the matched hospital. By contrast, the winning hospital had managers who carefully considered and conservatively invested in capital, used financial criteria in making these decisions, and generally were reluctant to incur debt.

The multivariate analysis confirmed the relationship between capital investment and performance. Hospitals with high capital costs were more likely to be losing hospitals, whereas those with low capital costs were more likely to be winning hospitals. Thus, for the same level of capital investment, losing hospitals generated less volume and lower revenues, thereby using their capital less efficiently. In sum, winning hospitals appeared to be advantaged both by having lower capital costs as a proportion of their total costs and by making better use of their capital investments.

Medical Records Coding—The case studies indicated that winning hospitals were earlier than losing hospitals to understand the importance of accurate medical records documentation and coding under PPS. They also devoted more resources to these activities. Further, winning hospitals were likelier to have considered alternative DRG assignments before, during, and after a patient's hospitalization to maximize payments under the DRG-based system.

The multivariate work found that changes in case-mix indexes between 1984 and 1988 were not associated with the performance of urban hospitals but were inversely related to the performance of rural hospitals. That is, rural hospitals with large increases in case mix were more likely to lose under PPS. To the extent that changes in coding reflect actual changes in patients, they should not be related to performance. These results may indicate that losing hospitals may not have been meeting general coding standards before PPS and that after its implementation they attempted to code their medical record abstracts more completely. Other ProPAC-sponsored work indicated that small hospitals were quicker than larger ones to code multiple diagnoses and complications during the mid-1980s. This finding could reflect the relative need for improved coding at small hospitals that had few opportunities for payment enhancements under PPS. Therefore, small hospitals were more likely to be losing and to have had larger changes in their case-mix indexes.

Cost Shifting to Non-PPS Units—When paid at least partly on the basis of costs, non-PPS units (such as skilled nursing and rehabilitation units) present opportunities for hospitals to allocate overhead, thereby lowering their PPS costs. At four case study sites, winning hospitals were able to outperform those that lost due in part to their cost accounting practices. At one hospital the SNF absorbed 20 percent of the hospital's overhead compared with the 6 percent of direct patient care costs it generated. At another, a SNF was allocated 45 percent of overhead, while accounting for only 16 percent of patient care costs. At yet a third, outpatient clinics absorbed sufficient overhead costs to increase PPS margins by a full six

percentage points. Clearly, non-PPS units provide a great opportunity for hospitals to lower their reported costs per case and improve their PPS margins. It should be noted, however, that these strategies do not lower resource costs but only shift the accounting of costs to other units.

Maximizing Revenues Under Medicare—The case studies indicated that winning hospitals, particularly larger ones, were more aggressive in identifying discretionary aspects of Medicare payment policy and seeking higher payments. In three winning hospitals, financial expertise (whether in-house or hired) was superior to that found in the losing hospitals. This acumen permitted winning hospitals to complete Medicare Cost Reports in an advantageous manner and enabled the hospitals to challenge Medicare on discretionary costs. New services that would improve margins were also more likely to be suggested.

CONCLUSIONS

The multivariate analysis and case studies revealed the complexities and the interrelated nature of hospital performance under Medicare's prospective payment system. No single factor appeared to determine performance, however. Rather, performance was affected by the hospital's environment, the design features of the payment system, the hospital's internal characteristics, and the strategies hospitals pursued to remain financially viable. The attempts winning hospitals made to exert control over external conditions—combined with the importance of good management, positive internal relations, and effective strategies to improve both production efficiency and increase revenues—indicate that hospitals do indeed have some control over their performance.

These findings support the basic philosophy of PPS. Given a set of external environment and payment features, hospitals with better management can influence their performance and do better financially than those that are poorly managed. Furthermore, the payment system is designed to reward good management. These operating assumptions of the payment system appear to be valid. The findings should not, however, be interpreted to suggest that management can overcome all of the financial pressures hospitals face or biases in the payment system.

The studies also demonstrate the interrelated nature of the factors affecting performance. Hospitals that performed well were likely to have benefited from certain PPS design features and their responses to their external environments. As a consequence, they used their resources to attract and retain physicians and other personnel, develop complementary services, and hire the expertise to keep themselves well-managed. Available resources and good management in turn promoted strong relations between the administration and the medical staff, lowered turnover rates among the management and clinical staffs, and fostered an environment of collaborative responsibility for the hospital. Strong physician support enabled management to pursue activities successfully to improve production efficiency or increase revenues.

These results indicate that many factors important for hospital performance are difficult to change quickly. Good relations between the medical staff and administration, the leadership and orientation of the medical staff, and cost containment cultures are fostered over time, not implemented overnight. Poor performers may not be able to improve their record as rapidly as they might hope. In addition, because lowering costs often requires up-front investments, some hospitals may not have the resources necessary to improve their performance. With PPS margins declining in recent years, it will be even more difficult for these hospitals to do better.

Due to the design and purpose of both studies, they cannot be used to assess the relative importance of external environment, PPS design features, or internal hospital factors and how these affect financial performance. The case studies controlled for the most important PPS payment factors—location, teaching status, and disproportionate share status. They focused intentionally on management and strategies and indicated why there is such wide range of performance within a given hospital group. However, to conclude that payment factors did not appear important in the case studies would be incorrect. Similarly, the multivariate analysis included many variables approximating hospital behavior, but could not adequately capture the complexity of hospital management. The only result indicating the relative role of management versus other factors was the multivariate study's finding that productivity was key to performance.

Noteworthy, too, is that the studies compared the best and worst performers under PPS. Defining the studies by consistent performance may have exaggerated the differences among hospitals. The findings may be of limited relevance for moderate performers. Further, the studies did not test whether a particular strategy was always successful and, if not, under what conditions it would be. Thus, while the studies are informative, they do not offer prescriptions for successful hospital performance.

Finally, the results should be placed in the context of findings from other research and subsequent hospital experience under PPS. The information described in Chapter 2 indicated the key role that targeted policies play in determining financial performance under Medicare's payment system. Policy changes redistribute money from one set of hospitals to another, with significant effects on performance. In addition, even though the two studies reported here did not examine total performance, in all likelihood many of the factors important for performance under PPS would also advantage hospitals overall. However, a thorough study of total performance remains to be done.

It should also be remembered that many changes have occurred since the period covered by the studies. Most recently, the reclassification of more than 1,000 hospitals will significantly affect the distribution and level of payments under PPS. Further, as noted above, numerous policy changes have targeted certain hospital groups—including rural, sole community, rural Medicare dependent, and disproportionate share hospitals—with the intended consequence of improving their performance under PPS. Teaching and disproportionate share policies explicitly overcompensate these two hospital groups. All of these targeted policies directly undercut the performance of other hospitals because new money usually was not added to finance their implementation. Hospitals not receiving any special payment adjustment are faring poorly under PPS, whereas payment adjustments not tied to legitimate cost differences advantage other hospitals.

Aside from policy changes, other trends will affect hospital financial performance. Continued declines in admissions will lower margins, while declines in length of stay may help to improve them. Increases in PPS costs per case remained well above the increase in the PPS market basket, indicating the industry's persistent inability to control costs. Further, budgetary constraints have restricted the funding of the payment system such that PPS margins have declined considerably since the study period, although total margins have been relatively stable.

The studies suggest that winning hospitals will be in the best position to maintain their respective performance level. Although all hospitals will continue to face financial pressure, winning hospitals have many internal qualities that will enable them to sustain or improve their performance. Without major shifts in policy and the subsequent payment redistributions, winning hospitals under PPS will continue to outperform other hospitals.

Notes to Chapter 3

1. More detail on the multivariate work is provided in the Prospective Payment Assessment Commission, *Winners and Losers Under the Prospective Payment System,* Intramural Technical Report No. I-92-01, June 1992. The case studies are described in Lewin-ICF, *An Examination of Winners and Losers Under Medicare's Prospective Payment System: Final Report,* ProPAC Extramural Technical Report No. E-92-02, May 1992.

2. A PPS margin compares PPS payments with Medicare inpatient operating costs. It measures the relationship between the costs of Medicare-covered services and how much is paid for them under the prospective payment system. PPS margins do not consider Medicare payments and allowable hospital costs excluded from PPS. such as capital and direct medical education.

3. Polychotomous logistic regression models were used to predict the probability of being a winner or a loser. Four models were constructed—one for each of the following hospital groups: urban winners, urban losers, rural winners, and rural losers.

4. The following categories were created to match winners and losers: teaching status (major, minor, or no); disproportionate share status (yes or no); size (small, medium, or large); ownership (public or not-for-profit); and location (urban or rural). Some pairs did not match exactly. For-profit hospitals were excluded from the case studies because of the concern that the study would get refocused to explain differences between proprietary and not-for-profit hospitals.

5. All-payer states establish similar payment rates for all public and private insurers. All-payer states granted waivers by the Federal government from participating in PPS during the study period were excluded (New Jersey and Maryland). Therefore, all-payer states in this analysis included New York and Massachusetts.

6. Prospective Payment Assessment Commission, *Rural Hospitals Under Medicare's Prospective Payment System,* Congressional Report No. C-91-03, October 1991.

Chapter 4

Hospital and Other Patient Care Services

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The health care delivery system has changed markedly since the enactment of Medicare in 1965. These changes are due to a number of factors, including growth in the elderly population and advances in technology, as well as modifications in the benefits offered by Medicare and other insurers. Utilization patterns have changed substantially: More and more patients are using post-acute care and ambulatory services, and fewer are relying on inpatient hospital care. The delivery system has adapted to these utilization changes by expanding the numbers and types of providers that offer alternatives to hospitals for certain services and by modifying patterns of care.

This chapter focuses on the utilization and capacity of the health care system. First, hospital inpatient services are discussed. Trends in utilization and capacity are described, followed by a discussion of changes in technology that affect the types of services offered. The characteristics of rural hospitals and the services these hospitals provide are highlighted, since such facilities are the predominant source of care for rural beneficiaries. Next, information on specialty hospitals—psychiatric hospitals and distinct-part units, children's hospitals, and cancer hospitals—is presented.

An overview of post-acute care services follows. These services are furnished by skilled nursing facilities (SNFs), home health agencies, rehabilitation hospitals and distinct-part units, long-term hospitals, and hospices. The use of post-acute care has risen significantly in the past five years, particularly due to changes in the interpretation of what Medicare covers.

Finally, ambulatory service use and capacity are described. Some of the recent growth in ambulatory services can be attributed to changes in technology and treatment patterns that allow patients to be treated in outpatient rather than inpatient settings.

ACUTE CARE HOSPITAL INPATIENT SERVICES

Use of hospital inpatient care declined significantly through most of the 1980s. In 1991, there were about 33 million inpatient admissions, more than 5 million fewer than in 1981. The decline in admissions occurred despite a 10 percent increase in the U.S. population. Changes in admission rates, however, have varied greatly among age groups and among hospitals by location and size.

Admissions of people under the age of 65 peaked at 27 million in 1981. Since then, admissions for this age group have fallen every year, dropping to 21 million in 1991—a cumulative decline of almost 22 percent (see Table 4-1). By contrast, admissions of people 65 or older increased about 12 percent from 1980 to 1983, the three years preceding implementation of Medicare's prospective payment system (PPS). Admissions declined by almost 9 percent for this age group over the next three years. Since 1986, however, admissions of people 65 or older have been increasing slowly, but still lag behind the growth rate of this age group.

Per capita admission rates tell an even more striking story. Per capita admissions for the nonelderly population have been falling steadily since the early 1980s. In 1981, there were 133 admissions per 1,000 persons under 65. The rate had fallen to 95 admissions per 1,000 by 1991, a cumulative decline of 29 percent. For the over-65 population, however, the admission rate peaked at 431 per 1,000 persons in 1983. Over the next four years the rate fell about 16 percent, reaching 363 per 1,000 in 1987. It has been relatively constant since that time.

Average length of stay was also decreasing slowly before the implementation of PPS (see Table 4-2).

Table 4-1. Change in Admissions to Community Hospitals, 1981-1991 (In Percent)

Year	All Admissions	Admissions by Age	
		Under 65	65 and Over
1981	0.9	0.0	3.0
1982	0.0	-1.6	4.1
1983	-0.5	-2.8	4.7
1984	-3.7	-4.2	-2.6
1985	-4.9	-4.7	-5.2
1986	-2.1	-2.5	-1.0
1987	-0.6	-1.0	0.4
1988	-0.4	-1.6	2.0
1989	-1.0	-2.0	1.2
1990	-0.5	-1.6	1.7
1991	-1.1	2.9	2.5
Cumulative change:			
1980-1983	0.3	-4.3	12.3
1983-1991	-13.3	-18.8	-1.3
1980-1991	-13.0	-22.3	10.9

SOURCE: American Hospital Association National Hospital Panel Survey.

The introduction of PPS was accompanied by a brief acceleration of this trend, especially for elderly patients. The average hospital stay for an elderly patient in 1991 was about 1.8 days shorter than in 1981, an 18 percent reduction. Average length of stay for the adult population (including elderly patients) declined by 10 percent over the same period. Thus, the difference in average length of stay between the elderly and nonelderly populations has declined, although people over 65 tend to stay longer at 8.5 days, on average, compared with stays of 6.5 days for all adults.

Table 4-2. Length of Stay for Adult Patients, by Age, 1981-1991

Year	Length of Stay		Percent Change	
	All Adults	Adults 65 and Over	All Adults	Adults 65 and Over
1981	7.21	10.36	0.4%	-0.1%
1982	7.16	10.12	-0.7	-2.3
1983	7.02	9.68	-2.0	-4.4
1984	6.66	8.95	-5.1	-7.5
1985	6.55	8.76	-1.7	-2.1
1986	6.59	8.79	0.6	0.4
1987	6.64	8.88	0.8	1.0
1988	6.64	8.82	0.0	-0.7
1989	6.64	8.84	0.0	0.2
1990	6.57	8.71	-1.1	-1.5
1991	6.47	8.53	-1.5	-2.3

SOURCE: American Hospital Association National Hospital Panel Survey.

Trends in length of stay and admissions reflect a combination of changes in medical technology and changes in coverage and payment policies for inpatient care and for potential substitute services. PPS and changes in payment policies under private insurance programs, together with utilization review, have created direct incentives for hospitals and physicians to shorten inpatient stays. At the same time, advances in medical technology have enhanced the variety and effectiveness of services that can be substituted for inpatient care. These medical advances have made it easier for physicians to discharge some patients earlier without reducing the quality of their care. Moreover, many services, including diagnostic tests, can now be performed before admission to the hospital.

Patients whose procedures are performed on an outpatient basis are usually the least ill and therefore use the fewest resources. Those patients hospitalized for procedures that are typically performed on an outpatient basis tend to be the sickest and use the most resources. They have longer lengths of stay and higher charges than patients receiving these procedures on an outpatient basis. Hence, after controlling for the type of cases, the decline in length of stay is probably much more dramatic than Table 4-2 indicates.

The current stability of average length of stay may indicate that unnecessary days have been eliminated or that opportunities for substituting outpatient care or other types of services for inpatient services have been greatly reduced. It could also mean that patient complexity has not changed in recent years. Alternatively, increases in patient complexity could have been offset by other forces that affect length of stay.

These shifts in admissions and length of stay have had dramatic effects on utilization of inpatient care. The rate of decline of admissions and length of stay, however, have differed greatly across groups of hospitals (see Table 4-3). The drop in admissions not only began earlier for rural community hospitals, but also was steeper than that for urban hospitals. Between 1980 and 1990, admissions to rural hospitals fell by 3.4 million, or 37 percent. This compares with the urban hospital experience, where admissions declined by

Table 4-3. Change in Total Admissions for Urban and Rural Community Hospitals, 1980-1990 (In Percent)

Year	Community Hospitals		
	All	Urban	Rural
1980	3.0%	2.9%	3.1%
1981	0.8	3.5	-7.4
1982	-0.2	0.1	-0.9
1983	-0.6	0.7	-5.2
1984	-2.8	-2.0	-5.3
1985	-4.9	-3.9	-8.4
1986	-3.2	-2.3	-6.8
1987	-2.4	-1.6	-5.7
1988	-0.5	-0.1	-2.0
1989	-1.1	-0.7	-2.7
1990	0.2	0.4	-1.4
Cumulative change:			
1980-1990	-13.7	-5.9	-37.1

SOURCE: American Hospital Association, *Hospital Statistics*, 1991-92.

1.6 million or 6 percent. In 1990, admissions to urban hospitals increased for the first time since 1983.

Smaller hospitals had a greater than average reduction in admissions regardless of urban or rural location. Admissions to hospitals with fewer than 100 beds fell by 33 percent between 1980 and 1990. By contrast, admissions to hospitals with 100 or more beds declined by 11 percent.

The drop in hospital volume caused by shorter average length of stay and the falloff in patient admissions has greatly affected hospital occupancy rates. Occupancy rates for community hospitals fell from a high of 76 percent in 1981 to 63 percent in 1986. They have remained relatively stable ever since and were at about 64 percent in 1991. Hospital occupancy rates, however, are substantially lower for small hospitals. Occupancy rates would have dropped more were it not for a 6.2 percent decline in the number of hospital beds. Much of this trend was due to hospital closure and downsizing.

The total number of community hospitals fell by 7.7 percent, from 5,830 in 1980 to 5,384 in 1990. Many hospitals closed, merged, or were acquired by other facilities. The number of hospitals began dropping in the 1970s, but sizable reductions did not start to occur until the mid-1980s.

The drop in the number of community hospitals varied by hospital ownership, location, and size. State and local hospitals showed the steepest decline in the community hospital category, falling by 19 percent, with 334 fewer facilities in 1990 than in 1980. The number of nongovernment, not-for-profit hospitals dropped by 131, or 4 percent, over the same period. Almost 60 percent of community hospitals were classified as nongovernment, not-for-profit hospitals in 1990. The number of investor-owned (for-profit) hospitals peaked in 1986, but remained higher in 1990 than in 1980.

The reduction in the number of hospitals between 1980 and 1990 occurred primarily among rural facilities, which declined by 14.4 percent compared with only 1.0 percent of urban hospitals (see Table 4-4). The reductions varied across hospital size categories. The number of urban hospitals with fewer than 50 beds fell 19 percent between 1980 and 1990. The number of larger urban hospitals (those with 400 or more beds) also fell by more than 10 percent over this period. However, the number of medium-sized urban hospitals actually increased slightly. By contrast, rural hospitals of all sizes experienced a decline in numbers. This was smallest for rural hospitals with fewer than 50 beds. The changes in the distribution of hospitals across size groupings was influenced by hospital closures, consolidations, and downsizing.

Large declines in volume that result in low occupancy may have a severe impact on the financial viability of hospitals. Ultimately, both access to and quality of care may be jeopardized if hospitals' financial conditions deteriorate. Despite the continuing trend of falling inpatient volume, total hospital margins have remained relatively constant since the mid-1970s, and actually have increased slightly over the past four years. (See Chapter 2 for more information.) In addition, declines in inpatient volume experienced by small urban and rural hospitals may partly reflect a shift in site of care from these institutions to larger urban hospitals. If this is so, a continuation of this trend may increase the nation's overall health care expenditures for inpatient services because care is being provided in larger hospitals that tend to have higher costs. (See, for example, the patterns of care analysis for acute myocardial infarction discussed in Chapter 5.)

Table 4-4. Distribution of Community Hospitals, by Location and Bed Size, 1980 and 1990

Location/Bed Size	1980 Number of Hospitals	1980 Percent of Hospitals	1990 Number of Hospitals	1990 Percent of Hospitals	Percent Change 1980-1990
Total	5,830	100.0%	5,384	100.0%	-7.7%
Urban	2,955	50.7	2,924	54.3	-1.0
6-49 beds	257	4.4	208	3.9	-19.1
50-99 beds	456	7.8	439	8.2	-3.7
100-199 beds	756	13.0	785	14.6	3.8
200-299 beds	553	9.5	619	11.5	11.9
300-399 beds	371	6.4	375	7.0	1.1
400-499 beds	251	4.3	218	4.0	-13.1
500+ beds	311	5.3	280	5.2	-10.0
Rural	2,875	49.3	2,460	45.7	-14.4
6-49 beds	1,031	17.7	953	17.7	-7.6
50-99 beds	1,006	17.3	824	15.3	-18.1
100-199 beds	614	10.5	521	9.7	-15.1
200-299 beds	162	2.8	120	2.2	-25.9
300-399 beds	41	0.7	33	0.6	-19.5
400+ beds	21	0.4	9	0.2	-57.1

SOURCE: American Hospital Association, *Hospital Statistics*, 1991-92.

Emerging Medical Technologies

Since the beginning of PPS, the Prospective Payment Assessment Commission (ProPAC) has been examining the impact of prospective payment on the diffusion of new technologies in conjunction with estimating the appropriate increase in PPS payments attributable to these technologies. In 1990, hospitals continued to expand the availability of new technologies with large operating and capital costs. Cardiac catheterization, computerized axial tomography (CT) scanning, lithotripsy, magnetic resonance imaging (MRI), megavolt radiation therapy, open-heart surgery, and organ transplantation were offered by more hospitals in 1990 than ever before (see Table 4-5). Diffusion has continued despite the cost to acquire and operate these technologies. However, the types of hospitals offering such services vary. In general, larger hospitals are more likely than smaller ones to offer them (see Table 4-6).

Since 1988, ProPAC has estimated the additional Medicare inpatient operating costs for selected technologies. Total projected fiscal year 1993 technology costs of $532 million represent 0.9 percent of Medicare inpatient operating payments.[1] The incremental costs for cases that would have been admitted even without the introduction of these technologies have consistently been less than 1.0 percent of Medicare inpatient operating expenditures. The estimated cost impact of 0.9 percent is somewhat larger than the 0.7 percent estimates obtained in each of the two preceding years. These estimates reflect only technologies adopted systemwide. They do not account for new admissions that would occur due to the availability of these technologies. Nor do the estimates consider the costs associated with improving existing technologies. Monoclonal antibodies, advances in computer technology, and automatic implantable cardiovascular defibrillators are expected to have the largest impact on costs of the technologies examined. These three technologies combined account for more than two-thirds of the total estimate.

Rural Hospitals

Rural hospitals differ from urban non-teaching hospitals in terms of their capacity, utilization, and the medical services they offer. Further, characteristics of rural hospitals as a group vary significantly. For example, rural referral centers typically have a large number of beds and resemble urban hospitals. Sole community hospitals have, on average, 50 acute care beds and are usually the only providers of hospital care in their market areas. Frontier hospitals may be found in counties with six or fewer

Table 4-5. Selected Services Provided by Hospitals, 1980-1990 (In Percent)

Year	Cardiac Catheterization	CT Scan	Lithotripsy (ESWL)	MRI	Megavolt Radiation Therapy	Open-Heart Surgery	Organ/Tissue Transplant	SPECT
1980	15.2%	19.8%	--	--	14.5%	9.8%	--	--
1981	14.8	21.4	--	--	14.5	9.6	--	--
1982	15.5	27.3	--	--	14.8	10.2	3.5%	--
1983	15.8	34.2	--	--	14.7	10.5	3.8	--
1984	16.3	41.9	--	--	15.0	10.8	4.0	--
1985	16.8	48.5	--	--	15.2	11.1	4.2	--
1986	18.6	52.9	2.8%	8.2%	15.5	12.0	4.8	--
1987	19.6	52.5	3.2	8.0	15.4	12.6	5.1	--
1988	20.9	55.6	4.2	10.6	16.0	13.3	6.5	--
1989	21.9	58.2	5.3	12.8	16.6	13.8	8.2	--
1990	24.1	61.1	5.4	15.6	17.0	14.7	9.1	16.2%

Note: CT=computerized axial tomography, ESWL=extracorporeal shock wave lithotripsy, MRI=magnetic resonance imaging, SPECT=single photon emission computerized tomography. Includes all Federal, non-Federal, short-term care, long-term care, and psychiatric hospitals and hospital units.

SOURCE: American Hospital Association, *Hospital Statistics*, 1980 through 1991-92.

persons per square mile; they often do not have the volume of patients necessary to maintain a broad scope of services.

Capacity and Utilization—On average, in 1989 rural hospitals had fewer beds, lower average daily censuses, and lower occupancy rates than urban non-teaching hospitals. However, there was considerable variation among these rural facilities. Sole community hospitals, for example, tended to be smaller, treated fewer patients, and had lower occupancy rates than other rural hospitals.

Rural hospitals vary on several dimensions, including size and the type of services they provide. This variation may help explain differences in capacity and utilization. Data from 1989 indicated that rural hospitals that provided only acute care were smaller than typical rural hospitals and had lower occupancy rates. Rural hospitals having both acute care and long-term care units were slightly smaller than other rural facilities but had higher than average occupancy rates. Hospitals with acute and psychiatric or substance dependency (alcohol and chemical) units were about twice as large as typical rural hospitals and had higher occupancy rates.

Services—In 1989, several services—basic radiology, emergency care, therapy services, and outpatient surgery—were available in virtually all hospitals, rural and urban alike (see Table 4-7). Among rural hospital groups, rural referral centers were the most likely to provide at least these basic

Table 4-6. Hospitals Providing Selected Services, by Hospital Size, 1990 (In Percent)

Hospital Size	Cardiac Catheterization	CT Scan	Lithotripsy (ESWL)	MRI	Megavolt Radiation Therapy	Open-Heart Surgery	Organ/Tissue Transplant	SPECT
All hospitals	24.1%	61.1%	5.4%	15.6%	17.0%	14.7%	9.1%	16.2%
6-24 beds	0.4	7.9	0.0	0.0	0.0	0.0	0.8	0.0
25-49 beds	0.4	28.2	0.2	1.2	0.3	0.1	1.8	2.0
50-99 beds	2.0	49.0	1.2	4.3	1.3	0.4	1.9	4.5
100-199 beds	16.3	73.7	2.8	11.7	9.8	5.4	5.7	14.2
200-299 beds	48.6	86.1	8.7	27.7	28.1	23.3	11.0	29.0
300-399 beds	65.2	85.4	11.8	34.4	49.5	44.5	18.4	38.4
400-499 beds	74.7	84.9	13.2	42.6	58.1	57.4	27.2	36.2
500+ beds	68.4	76.4	24.5	48.3	58.9	59.8	40.2	42.5

Note: CT = computerized axial tomography, ESWL = extracorporeal shock wave lithotripsy, MRI = magnetic resonance imaging, SPECT = single photon emission computerized tomography. The hospital size categories include all hospital-based facilities in the United States.

SOURCE: American Hospital Association, *Hospital Statistics*, 1991-92.

Table 4-7. Hospitals Offering Basic Services, 1989 (In Percent)

Hospital Group	Number of Hospitals	Basic Radiology	Emergency Department	Therapy Services	Outpatient Surgery	Blood Bank	Histopathology
Urban non-teaching	1,348	99%	95%	97%	98%	75%	80%
Rural	2,041	98	97	92	94	61	44
Rural <25 beds	223	98	95	78	80	45	18
Rural 25-49 beds	684	98	95	86	91	52	20
Rural 50-99 beds	642	99	99	97	98	61	46
Rural 100-149 beds	256	99	99	99	99	75	78
Rural 150-199 beds	115	100	100	100	100	85	94
Rural 200 + beds	119	97	99	99	100	89	96
Rural referral	223	98	100	100	100	86	93
Sole community	422	98	99	90	91	60	37
Low volume	549	97	94	79	85	45	13

SOURCE: ProPAC analysis of American Hospital Association Annual Survey data.

services (99 percent), while small rural hospitals with fewer than 25 beds were the least likely (78 percent). The two most prevalent services, basic radiology and emergency services, were offered in more than 90 percent of all hospitals. Two other basic services, blood banks and histopathology laboratories, were less widespread, particularly among rural hospitals. On average, only 61 percent of rural hospitals offered blood banks, and 44 percent provided histopathology services.

The likelihood of a hospital offering a specific service increased with size. Rural hospitals, with the exception of rural referral centers and large facilities, did not generally offer specialized services such as intermediate radiology, cardiac catheterization laboratories, trauma centers, and open-heart surgery. Overall, 11 percent of rural hospitals had intermediate radiology capabilities, 5 percent had cardiac catheterization laboratories, 5 percent had trauma centers, and only 1 percent performed open-heart surgery.

Acute Care Units—In 1989, 83 percent of the beds in rural hospitals were acute care beds compared with 86 percent in urban non-teaching hospitals (see Table 4-8). Average occupancy rates for these hospitals were 49 percent and 62 percent, respectively. In rural hospitals with low volume, acute care beds accounted for three-quarters of total capacity but average occupancy rates were only 20 percent. Urban non-teaching and larger rural hospitals devoted about 86 percent of their total beds to acute care and had occupancy rates ranging from 43 percent to 64 percent. Smaller hospitals (fewer than 50 beds), sole community hospitals, and hospitals located in frontier areas were the least likely to exclusively offer acute care. These figures suggest that, in general, rural hospitals—especially smaller rural facilities—have diversified their service mix.

Long-Term Care Units—Skilled nursing care, intermediate care, rehabilitation care, and swing beds constitute categories of hospital-based long-term care. These types of units were more widespread among rural hospitals than urban non-teaching hospitals. However, occupancy rates for long-term care units were lower in rural hospitals (66 percent) than in urban hospitals (77 percent).

The likelihood of a rural hospital having a long-term care unit was associated with size, with smaller hospitals more likely to furnish these services. On average, 62 percent of rural hospitals provided long-term care, compared with 34 percent of urban non-teaching hospitals. Rural referral centers were the least likely to provide long-term care; only 37 percent did so, devoting 16 percent of their capacity to these units. By contrast, 81 percent of hospitals with low volume provided long-term care, with these units accounting for 60 percent of capacity and an average occupancy rate of 65 percent.

SPECIALTY HOSPITALS

In addition to treatment received in general acute care hospitals, people can also receive inpatient

Table 4-8. Capacity and Utilization of Acute and Long-Term Care Units

Hospital Group	Acute Care: Percent of Total Beds	Acute Care: Average Number of Beds	Acute Care: Occupancy Rate	Long-Term Care*: Percent of Total Beds	Long-Term Care*: Average Number of Beds	Long-Term Care*: Occupancy Rate
Urban non-teaching	86%	153	62	24%	43	77
Rural	83	66	49	47	35	66
Rural <25 beds	69	28	32	65	31	71
Rural 25-49 beds	82	33	30	54	32	63
Rural 50-99 beds	86	58	43	43	37	62
Rural 100-149 beds	86	100	52	29	41	71
Rural 150-199 beds	87	140	58	17	38	82
Rural 200+ beds	86	224	64	14	39	79
Rural referral	86	178	62	16	38	76
Sole community	79	48	42	50	31	65
Low volume	75	25	20	60	31	65

Note: Acute and long-term care columns may add to more than 100 because of the presence of swing beds, which are counted twice.

* These statistics are for the hospitals that reported long-term care beds. On average, 62 percent of rural hospitals had long-term beds. This percentage decreases with bed size.

SOURCE: ProPAC analysis of American Hospital Association Annual Survey data.

care at the following specialty hospitals: psychiatric hospitals and distinct-part units, children's hospitals, and cancer hospitals. These hospitals are excluded from Medicare's prospective payment system to recognize differences in their patients and treatment patterns. Payments for these facilities follow the policy set by the Tax Equity and Fiscal Responsibility Act (TEFRA) of 1982, which changed the way they were reimbursed from a retrospective cost-based method to one based on a target rate of increase. These providers are paid on the basis of each facility's historical costs, trended forward with a limit (target) placed on the rate of increase in per case reimbursable costs, as established and annually updated by the Health Care Financing Administration (HCFA).

Psychiatric Hospitals and Distinct-Part Units

Psychiatric facilities treat patients with mental disorders, including organic and affective disorders, schizophrenia, other psychoses, and alcohol- and drug-related problems. The number of these facilities climbed to 1,441 in PPS 6, a 51 percent increase from PPS 2. Smaller facilities grew at a faster rate, and the average number of beds per facility declined to 68 from 102 (see Table 4-9). Total Medicare discharges grew 54 percent over the period, to 253,765. Medicare discharges from these facilities represented 27 percent of total discharges in PPS 6—a four percentage point increase over five years.

Table 4-9. Growth in the Number and Use of Psychiatric Facilities

PPS Year	Number of Facilities: Total	Number of Facilities: Hospitals	Number of Facilities: Distinct-Part Units	Average Bed Size: Total	Average Bed Size: Hospitals	Average Bed Size: Distinct-Part Units	Medicare Discharges: Number: Total	Medicare Discharges: Number: Hospitals	Medicare Discharges: Number: Distinct-Part Units	Medicare Discharges: Percent: Total	Medicare Discharges: Percent: Hospitals	Medicare Discharges: Percent: Distinct-Part Units
2	952	353	599	102	208	40	164,302	71,818	92,484	23.0%	19.3%	25.3%
3	1,132	371	761	93	202	40	197,116	75,500	121,616	24.1	20.0	26.1
4	1,266	410	856	84	177	40	214,039	79,029	135,010	24.2	20.3	26.1
5	1,392	462	930	80	161	29	238,911	89,072	149,839	24.4	20.3	26.4
6	1,441	472	969	68	127	39	253,765	89,411	164,354	27.0	21.5	29.7

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Table 4-10. Characteristics of Medicare Patients in Psychiatric Facilities, 1990

Characteristic	Hospitals	Distinct-Part Units	Total
Mean age (years)	52.7	58.3	56.1
Sex			
Female	44.1%	55.7%	51.2%
Male	55.9	44.3	48.8
Race			
White	78.5	83.0	81.3
Non-white	19.2	14.4	16.2
Medicare status			
Aged	37.3	50.8	45.6
Disabled	62.5	49.0	54.2
Dual-eligibles	29.4	28.2	24.3

SOURCE: ProPAC analysis of MedPAR data from the Health Care Financing Administration, 1990.

In 1990, the average age of a Medicare psychiatric patient in these facilities was 56 (see Table 4-10). More than half of the Medicare patients were under 65 and qualified for the Medicare program due to a disability, rather than because of their age. About one-fourth (24 percent) were also eligible for Medicaid. The top four diagnoses were schizophrenic psychoses, affective psychoses, alcohol dependence, and organic psychotic conditions (dementia). The first two have consistently been top diagnoses since the mid-1980s and together represent more than 65 percent of Medicare discharges from these facilities during this period. Alcohol dependence and organic psychotic conditions each represent about 6 percent of discharges during the same period.

Psychiatric facilities may be either hospitals or distinct-part units in acute care general hospitals. There have been significant differences in patient characteristics and utilization between these two facility types. Psychiatric hospitals are a heterogeneous group, including both private and government-owned institutions. Public hospitals often serve a different population than private psychiatric hospitals.

Psychiatric Hospitals—In 1990, psychiatric hospitals treated a greater percentage of Medicare disabled and younger Medicare patients than distinct-part units. More males than females were admitted to these hospitals, and a greater percentage of the patients were not white. Patients eligible for Medicaid as well as Medicare (dual-eligibles) represented 29 percent of total Medicare admissions. During the five-year period (from PPS 2 through PPS 6), the total number of psychiatric hospitals rose 34 percent; total Medicare discharges from these facilities grew 24 percent, to 89,411 discharges. The average number of beds dropped from 208 in PPS 2 to 127 in PPS 6.

Distinct-Part Units—In 1990, distinct-part psychiatric units in acute care general hospitals treated patients who were, on average, six years older than patients seen in psychiatric hospitals. A greater percentage of these patients were white, female, and qualified for Medicare by reason of age rather than disability. Patients dually eligible for Medicare and Medicaid represented 28 percent of total Medicare admissions. Distinct-part units constituted more than half of the total exempt psychiatric facilities and provided services to almost twice as many Medicare patients as the exempt psychiatric hospitals did. Medicare discharges made up 30 percent of total discharges from these units, which have averaged about 40 beds per unit.

Children's Hospitals

Children's hospitals predominantly serve patients under the age of 18. The majority of children admitted to PPS-excluded children's hospitals receive Medicare benefits because they have end-stage renal disease (ESRD).

The number of children's hospitals filing Medicare Cost Reports grew 36 percent, from 28 to 38 hospitals, between PPS 2 and PPS 6, with most of the growth occurring between PPS 2 and PPS 3. However, while only 38 hospitals filed cost reports in PPS 6, about 59 were excluded from PPS, according to HCFA.[2] Medicare discharges make up only about 2 percent of total discharges in PPS-excluded children's hospitals. The number of Medicare discharges increased 59 percent from 1,690 in PPS 2 to 2,684 in PPS 6.

In 1990, the three most common diagnoses of Medicare patients in children's hospitals were complications related to an organ transplant, chronic renal failure, and asthma, accounting for 26 percent of Medicare cases. The median age of Medicare

patients in children's hospitals was 18, which may seem old. However, although children's hospitals must treat a predominant number of patients under 18, they can treat patients of other ages as well. Two children's hospitals excluded from PPS treat adult patients through a burn center and a cardiac care center, for example. In addition, patients with cystic fibrosis usually continue treatment at children's hospitals after they become adults. In fact, approximately 23 percent of Medicare patients in these hospitals were over 65, thus increasing the average age of patients treated in children's hospitals.

Cancer Hospitals

Certain hospitals involved extensively in cancer research and treatment are also excluded from PPS. To qualify for excluded status, these hospitals must have been recognized by the National Cancer Institute (NCI) as a comprehensive cancer center or clinical cancer research center as of April 20, 1983. The hospital must demonstrate that it is organized primarily for cancer research and treatment, and that 80 percent or more of its total discharges are in diagnosis-related groups (DRGs) reflecting cancer as the principal diagnosis. Medicare does not pay for research costs, experimental items or treatments. Nor does it reimburse for costs associated with activities sponsored by other government entities (such as NCI clinical trials). However, the Medicare program does cover the costs of providing usual medical care to cancer patients.

Cancer hospitals are exempt from PPS because they specialize in treating relatively costly cancer patients. This precludes them from taking advantage of cost averaging across cases so that they can offset costlier cases within a DRG with low-cost cases. Nor can they use revenue from profitable DRGs to offset losses in others. Specially designated cancer subunits of hospitals are not exempt from PPS because hospitals can offset higher costs within these cancer subunits with profits from other cases.

The number of exempt cancer hospitals remained constant at eight facilities through the mid-1980s. One hospital has been added since then, although no more can be added without a change in legislation. These hospitals treated about 14,600 Medicare patients each year from PPS 3 to PPS 6, or about 27 percent of their total discharges.

In 1990, Medicare patients in these facilities were, on average, 69 years old. Cancer hospitals treated equal numbers of men and women. Most of the patients (87 percent) were eligible for Medicare due to their age, and 7 percent were also eligible for Medicaid.

POST-ACUTE CARE SERVICES

Post-acute care services are generally provided after a hospital inpatient stay. These services provide continuing care for beneficiaries no longer requiring hospital care. Services may be either rehabilitative or palliative in nature.

Skilled Nursing Facilities

Medicare's skilled nursing facility benefit is limited to payment for extended care services that are furnished in a SNF. To be eligible for SNF coverage, beneficiaries must be in need of skilled nursing or other skilled rehabilitation services on a daily basis, have completed a minimum three-day hospital stay, and have been admitted to the SNF within 30 days after discharge from the hospital. The SNF care must be necessary because of the medical condition that required the hospital stay or a condition that arose during the stay. The benefit is limited to 100 days of post-acute care per spell of illness. Coinsurance, equal to 12.5 percent of the inpatient hospital deductible or $78.50 per day in 1991, is required after the twentieth day of service.

The Medicare SNF benefit covers skilled nursing services; physical, speech, and occupational therapy; medical social services; drugs and biologicals; whole blood and packed red blood cells; supplies, appliances, and equipment; and other diagnostic and therapeutic items or services. These must be provided by the SNF or a hospital with which the SNF has a transfer agreement.

Under the Medicare Catastrophic Coverage Act (MCCA) of 1988, Medicare payments to SNFs totaled $3.4 billion. Following repeal of the Act, payments fell to $2.4 billion in 1990, but rose slightly to $2.5 billion in 1991. Medicare-covered SNF days show the same pattern as payments, peaking in 1989 and subsequently declining: 30

million Medicare SNF days were covered in 1989, compared with 26 million in 1990 and about 24 million in 1991 (see Table 4-11).

The number of patients using SNF care shows a slightly different trend than payments and covered days. The number of patients served peaked at 815,000 in 1990, compared with 1989 when 636,000 Medicare beneficiaries received SNF services. This figure dropped to 765,000 by 1991, however. The main reason for the high expenditures in 1989 under MCCA seems to be the greater number of days per patient served, rather than the number of patients receiving services. The average number of days per patient served in 1989 was 47.2, compared with 31.9 in 1990 and 31.5 in 1991.

Regulations promulgated in response to the Omnibus Budget Reconciliation Act (OBRA) of 1987, which took effect at the end of 1990, required all Medicare or Medicaid facilities to be certified at one level of care (roughly analogous to the SNF level of care). It has been hypothesized that the number of skilled care beds available to Medicare beneficiaries may increase as a result of this legislation. In 1991 there were some 16,000 nursing home facilities in the United States, of which 63 percent (about 9,800) were certified by the Medicare or Medicaid programs. This compares to estimates for 1990 of about 9,000 certified facilities. Of those facilities, 65 percent were proprietary.

The number of nursing homes—and the percentage that are certified by Medicare or Medicaid and are thus available to Medicare beneficiaries—varies widely by state (see Table 4-12). Illinois has 1,217 nursing homes, but only 34 percent are certified by the Medicare or Medicaid programs. Only 13 percent of Iowa's 469 nursing homes are Medicare-certified, in contrast to Idaho, where 100 percent of its 71 facilities are certified.

The number of facilities does not really indicate nursing home capacity, however, because facility size can vary. Overall, there were an estimated 580,929 Medicare- or Medicaid-certified skilled beds in 1991—one for about every 73 persons over the age of 65. Bed supply available to Medicare beneficiaries also varies dramatically by state. There is a certified skilled bed for every 15 persons over 65 in North Dakota and one for every 18 persons over 65 in Minnesota. But Oklahoma's ratio is 787 persons over 65 for each certified skilled bed, while New Mexico's is 526 to one.

When all Medicare- or Medicaid-certified nursing homes are included, bed supply is much more evenly distributed across states. In the United States in 1990, there was one nursing home bed per 24 persons over 65. Oklahoma had one nursing home bed for every 16 persons over 65, whereas New Mexico had a bed for every 37 persons over 65. While the supply of Medicare-certified skilled beds is very skewed, the supply of total nursing home beds is not. The OBRA 1987 regulations that require both Medicare and Medicaid facilities to meet the same

Table 4-11. Medicare Beneficiary Skilled Nursing Facility Utilization, 1980-1991

Year	Covered Days (In Thousands)	Percent Change	Patients Served* (In Thousands)	Percent Change	Days Per Patient Served	Percent Change
1980	8,645	--	257	--	33.6	--
1981	8,518	-1.5%	251	-2.3%	33.9	0.9%
1982	8,814	3.5	252	0.4	35.0	3.1
1983	9,314	5.7	265	5.2	35.2	0.5
1984	9,640	3.5	299	12.8	32.3	-8.2
1985	8,927	-7.4	314	5.0	28.5	-11.8
1986	8,160	-8.6	304	-3.2	26.8	-5.7
1987	7,451	-8.7	293	-3.6	25.4	-5.4
1988	11,033	48.1	384	31.1	28.7	13.0
1989	30,046	172.3	636	65.6	47.2	64.5
1990	26,000	-13.5	815	28.1	31.9	-32.4
1991	24,126	-7.2	765	-6.1	31.5	-1.2

* These numbers are for fee-for-service only and may not include health maintenance organization enrollees.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Table 4-12. Certified Nursing Facilities and Beds, by State, 1990

State	Total Number of Licensed Facilities	Total Number of Medicare- or Medicaid-Certified Facilities	Percent of Facilities Certified	Ratio of Population Over Age 65 to Certified Skilled Beds
North Dakota		81		15
Minnesota	469	422	90%	18
Connecticut	330	211	64	28
New York	856	586	68	33
Montana	99	91	92	34
Utah	92	63	68	39
Rhode Island	106	85	80	47
Ohio	962	579	60	48
Delaware	55	33	60	51
Massachusetts	532	353	66	53
Pennsylvania	669	625	93	53
Maryland	214	169	79	53
South Carolina	174	148	85	54
Kentucky	372	212	57	64
Vermont	51	25	49	69
Wisconsin	433	209	48	69
Nevada	38	35	92	69
New Jersey		218		75
Michigan	440	327	74	76
California	1,216	1,141	94	77
North Carolina	326	149	46	77
Alabama	215	212	99	77
Idaho	71	71	100	79
Wyoming	37	27	73	84
Hawaii	42	31	74	93
West Virginia	101	64	63	100
Indiana	540	281	52	107
Florida	552	520	94	113
Tennessee	283	154	54	116
Alaska		7		138
Missouri	539	296	55	138
Washington	281	235	84	138
Colorado	208	152	73	143
Georgia		215		149
Nebraska	209	55	26	152
South Dakota	108	35	32	156
Louisiana	347	77	22	182
Illinois	1,217	417	34	185
Maine	162	34	21	201
Arizona	141	129	91	203
District of Columbia	17	11	65	205
Virginia	222	163	73	212
Texas	1,309	441	34	215
Oregon	190	112	59	220
Kansas	443	92	21	238
Arkansas	228	59	26	264
Mississippi		48		283
Iowa	469	59	13	317
New Hampshire	73	18	25	436
New Mexico	90	28	31	526
Oklahoma	411	39	9	787

Note: Certified facilities are a subset of licensed facilities.

SOURCE: Analysis by Abt Associates Inc., under contract to ProPAC, and 1990 Census data.

standards for certification may result in an increase in the supply of Medicare-certified beds.

Swing Beds in Hospitals

Medicare's swing-bed program, enacted under OBRA 1980, was designed to address the shortage of nursing home beds in rural areas and the low occupancy rates in many rural hospitals. The program allowed hospitals with fewer than 50 licensed beds to receive payments for using their bed capacity to furnish either acute care services or skilled nursing facility level services to Medicare beneficiaries. Hospitals began participating in the program in 1982. In 1987, the program was extended to rural hospitals with fewer than 100 staffed beds. States also have the option of certifying swing beds under their Medicaid programs.

The total number of swing beds is difficult to determine. Because it is easy to certify a bed as a swing bed, the number of beds certified can fluctuate. In addition, it is impossible to say how many certified swing beds are being used as such at a given time.

In 1984, only 468 of 1,514 eligible small rural hospitals having fewer than 50 beds, or 31 percent, participated in the swing-bed program (see Table 4-13). By 1989, 843 rural hospitals with fewer than 50 beds (67 percent of those eligible) had joined the program; 321 rural hospitals having between 50 and 100 beds (about 44 percent) also had entered. Participation in the program varies somewhat by size of the hospital. Fewer rural hospitals with one to 24 beds had any swing beds certified (60 percent) compared to 68 percent of rural hospitals with 50 to 100 beds. However, hospitals located in frontier areas were the most likely to have swing beds (71 percent). This may be due to the lack of alternative nursing home care in these sparsely populated regions. Most swing-bed hospitals are located in the West North Central region of the United States (Iowa, Kansas, Minnesota, Missouri, Nebraska, and North and South Dakota).

The percentage of total days accounted for by swing-bed care increased between 1984 and 1989. In 1984, for example, about 24 percent of participating hospitals provided less than 5 percent of their total days of care to swing-bed patients. About 8 percent provided more than 20 percent of their total days of care to these patients. By 1989, only 28 percent of participating hospitals provided less than 5 percent of their total days of care to swing-bed patients, while 16 percent provided more than 20 percent.

Table 4-13. Number of Small Rural Hospitals, by Bed Size and Swing-Bed Status, 1984-1989

Characteristic	1984	1985	1986	1987	1988	1989
Frontier						
Total	301	269	243	249	255	245
Non-swing	204	139	112	96	90	72
Swing	97	130	121	153	165	173
0-24 beds						
Total	332	298	262	259	250	233
Non-swing	240	163	120	115	106	94
Swing	92	135	142	144	144	139
25-49 beds						
Total	881	811	807	812	797	777
Non-swing	602	394	351	315	279	246
Swing	279	417	456	497	518	531
Total	1,514	1,378	1,312	1,320	1,302	1,255
Non-swing	1,046	696	583	526	475	412
Swing	468	682	729	794	827	843

Note: Total bed size includes number of swing beds.

SOURCE: ProPAC analysis of Medicare Cost Report and Area Resource File data from the Health Care Financing Administration.

Home Health Care Services

Medicare beneficiaries qualify for home health care services if they are homebound; under a physician's care; and need part-time or intermittent skilled nursing care, physical therapy, or speech therapy. Once beneficiaries qualify for services, they are eligible and can receive other covered services including occupational therapy, medical social services, part-time or intermittent services of a home health aide, medical supplies, and durable medical equipment. There is no prior hospitalization requirement. Program guidelines generally limit part-time or intermittent nursing care to 35 hours per week for up to three weeks. There is no deductible or coinsurance charge for this care. Services must be provided by a Medicare-certified home health agency.

Changes in coverage fueled the growth in home health expenditures and visits during the 1980s, making home health services the fastest-growing Medicare benefit.[3] Medicare's 1991 home health expenditures totaled $5.6 billion, an increase of 583 percent since 1980 and 26 percent since 1990. The number of visits received by Medicare beneficiaries also rose, to about 78 million in 1991 (see Table 4-14). Approximately 1.7 million Medicare patients received home health services in 1991, with an average of 45.7 visits per patient. In September 1990, 5,730 Medicare-certified home health agencies offered services.

Rehabilitation Hospitals and Distinct-Part Units

Rehabilitation facilities provide services to restore patients to their highest level of functioning; services usually include rehabilitation nursing, physical therapy, and occupational therapy services. These facilities are excluded from PPS and paid under the policy set by TEFRA. The number of rehabilitation hospitals filing Medicare Cost Reports grew by 18 percent between PPS 2 and PPS 6, from 61 to 72 hospitals (see Table 4-15). However, in 1989, 120 hospitals were certified by HCFA as excluded from PPS; those hospitals granted exclusions by HCFA but not filing Medicare Cost Reports had no Medicare patients in PPS 6. In PPS 6, Medicare discharges constituted about 66 percent of total discharges from PPS-excluded rehabilitation hospitals. The number of Medicare discharges increased 63 percent, from 25,467 in PPS 2 to 41,490 in PPS 6.

There was a marked growth in the number of rehabilitation distinct-part units. The number of distinct-part units filing Medicare Cost Reports grew 92 percent between PPS 2 and PPS 6, from 288 units in PPS 2 to 554 units in PPS 6. According to HCFA, however, about 628 units were certified as PPS-excluded in 1989. In PPS 6, Medicare discharges made up about 67 percent of total discharges from PPS-excluded rehabilitation distinct-part units. The number of Medicare discharges rose from 45,303 in PPS 2 to 98,387 in PPS 6, or 117 percent.

Table 4-14. Home Health Care Utilization, 1980-1991

Year	Visits (In Thousands)	Percent Change	Patients Served[a] (In Thousands)	Percent Change	Visits Per Patient Served	Percent Change
1980	16,322	--	726	--	22.5	--
1981	22,688	39.0%	948	30.6%	23.9	6.5%
1982	30,628	35.0	1,154	21.7	26.5	10.9
1983	36,898	20.5	1,318	14.2	28.0	5.5
1984	40,422	9.6	1,498	13.7	27.0	-3.6
1985	39,449	-2.4	1,549	3.4	25.5	-5.6
1986	38,000	-3.7	1,571	1.4	24.2	-5.1
1987	35,588	-6.3	1,544	-1.7	23.0	-5.0
1988	37,100	4.2	1,582	2.5	23.5	2.2
1989	46,173	24.5	1,685	6.5	27.4	16.6
1990	65,985	42.9	1,665	-1.2	39.6	44.5
1991	77,970	18.2	1,705[b]	2.4	45.7	15.4

[a] These numbers are for fee-for-service only and may not include health maintenance organization enrollees.

[b] Estimated.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Table 4-15. Growth in the Number and Use of Rehabilitation Facilities

PPS Year	Number of Facilities			Medicare Discharges					
				Number			Percent		
	Total	Hospitals	Distinct-Part Units	Total	Hospitals	Distinct-Part Units	Total	Hospitals	Distinct-Part Units
2	349	61	288	70,770	25,467	45,303	61.3%	57.7%	62.1%
3	446	64	382	84,988	27,677	57,311	61.3	60.1	61.5
4	521	68	453	102,742	33,115	69,627	61.6	63.4	61.3
5	590	78	512	121,271	38,323	82,948	63.8	62.1	64.1
6	626	72	554	139,877	41,490	98,387	66.9	66.1	67.0

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration.

Rehabilitation facilities primarily serve patients requiring post-acute care. In 1990, 83 percent of Medicare patients had an inpatient stay within 30 days prior to admission to a rehabilitation facility. The three most common diagnosis codes of Medicare patients in these facilities were rehabilitation procedures, hemiplegia (paralysis), and hip fracture, accounting for 73 percent of cases. In 1990, the characteristics of Medicare patients in rehabilitation hospitals were similar to those in distinct-part units (see Table 4-16). They were, on average, 75 years old; more than half (62 percent) were female, and only 9 percent were eligible for both Medicare and Medicaid.

Long-Term Hospitals

Long-term hospitals are also excluded from PPS. They are defined as any hospital with an average inpatient stay exceeding 25 days that is not otherwise classified as a psychiatric or rehabilitation hospital. Most long-term hospitals are chronic or pulmonary facilities. They care for patients who are not acutely ill but who may not be sufficiently independent of life-sustaining technology to be cared for in a traditional nursing home.[4] In 1990, the average beneficiary treated in a long-term hospital was 72 years old (see Table 4-17). Almost 17 percent of patients in these hospitals were eligible for Medicare because of a disability; 12.5 percent were also eligible for Medicaid.

There were 65 long-term hospitals in PPS 6, most of which were located in the New England and South Atlantic regions. About half of the long-term

Table 4-16. Characteristics of Medicare Patients in Rehabilitation Facilities, 1990

Characteristic	Hospitals	Distinct-Part Units	Total
Mean age (years)	74.4	74.7	74.6
Sex			
Female	63.5%	60.4%	61.5%
Male	36.5	39.6	38.5
Race			
White	86.2	86.3	86.3
Non-white	10.5	10.4	10.5
Medicare status			
Aged	91.1	92.0	91.7
Disabled	8.7	7.6	8.0
Dual-eligibles	9.5	8.8	9.1

SOURCE: ProPAC analysis of MedPAR data from the Health Care Financing Administration.

Table 4-17. Characteristics of Medicare Patients in Long-Term Hospitals, 1990

Characteristic	Total
Mean age (years)	71.9
Sex	
Female	52.4%
Male	47.6
Race	
White	81.4
Non-white	15.9
Other	2.6
Medicare status	
Aged	82.9
Disabled	16.7
Other	0.3
Dual-eligibles	12.5

SOURCE: ProPAC analysis of MedPAR data from the Health Care Financing Administration.

Table 4-18. Growth in the Number and Use of Long-Term Hospitals

PPS Year	Number of Long-Term Hospitals	Medicare Discharges	
		Number	Percent
2	64	14,582	37.9%
3	68	14,646	41.2
4	62	13,106	40.8
5	67	14,520	41.9
6	65	16,735	51.2

SOURCE: ProPAC analysis of Medicare Cost Report data from the Health Care Financing Administration

hospitals were government-owned and half were voluntary; there were few proprietary long-term hospitals. In PPS 6, half of discharges from long-term hospitals were Medicare beneficiaries. The number of Medicare beneficiaries treated in those hospitals increased by 15 percent between PPS 2 and PPS 6, from 14,582 to 16,735 (see Table 4-18).

Hospice Care

The Medicare hospice benefit was introduced in 1984. Terminally ill Medicare beneficiaries whose life expectancy is six months or less are eligible to receive these services. Hospice care provided to dying persons and their families is supportive rather than cure-oriented. Once a beneficiary chooses to receive the hospice benefit, he or she must waive the right to all other Medicare benefits. Coverage is limited to 210 days, but beneficiaries can receive an additional 90-day period of coverage if they are recertified as terminally ill. Hospice benefits include nursing care, various therapies, medical social services, homemaker home health services, physicians' services, short-term inpatient care, and patient counseling.

The number of Medicare-certified hospice providers increased from 108 in 1984 to 825 in 1990, and the number of beneficiaries served has increased from 2,200 to almost 140,000 over the same time period (see Table 4-19).

Table 4-19. Beneficiary Utilization of the Hospice Benefit, 1984-1995

Fiscal Year	Hospice Admissions	Days Per Admission
1984	2,200	29
1985	11,000	33
1986	28,012	37
1987	68,721	41
1988	84,770	44
1989	89,008	48
1990	102,359	51
1991	112,595	53
1992	120,477	55
1993	126,501	57
1994	132,826	59
1995	139,467	61

SOURCE: Congressional Budget Office estimates, 1984-89, and baseline projections for 1990-95.

AMBULATORY CARE SERVICES

Ambulatory care services are procedures, tests, and evaluation and management services that can be safely and efficiently performed in an outpatient or free-standing setting. Moreover, many of the simpler tests and procedures can also be performed in physicians' offices by physicians or technicians.

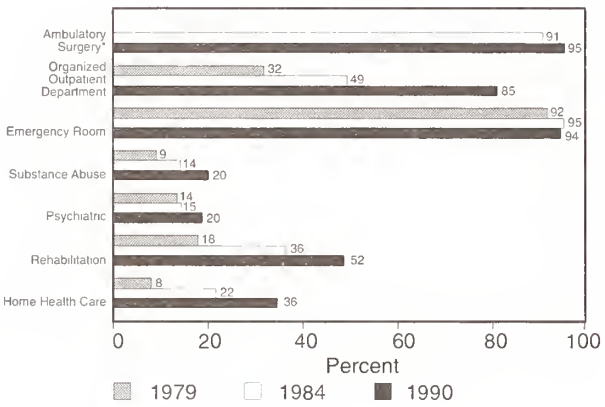
In the 1980s, the diffusion and development of new technologies caused a radical change in the delivery and utilization of ambulatory care. Moreover, advancements in surgical techniques and physician proficiency have allowed procedures like cataract surgery and hernia repair to be performed in ambulatory settings. Changes in medical practice and the introduction of new technologies, such as advanced imaging (CT scans and MRIs); sonographies (ophthalmologic ultrasound, echocardiography and others); fiberoptic instruments for endoscopies; and automated laboratory tests have expanded the capacity to provide ambulatory services.

Hospital Outpatient Services

The addition of new ambulatory procedures and technologies has been associated with a rapid rise in the number of hospitals offering these services (see Figure 4-1). The number of hospitals with an organized outpatient department grew from 2,191 in 1979 to 4,322 in 1990 (35 percent to 85 percent).[5] Hospitals have also increasingly provided other ambulatory services through women's health clinics, sports medicine clinics, outpatient programs for patients with AIDS, and special programs for geriatric patients.

Simultaneous with the upward trend in outpatient capacity, the utilization of outpatient services has increased. Between 1980 and 1990, the number of outpatient visits to hospitals climbed more than 40 percent from 1980 to 1990.[6] Much of this growth

Figure 4-1. Community Hospitals Providing Selected Outpatient Services (In Percent)



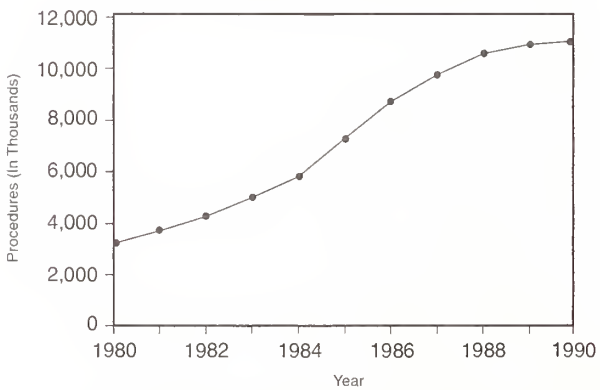
* Not reported in 1979.

SOURCE: American Hospital Association, *Hospital Statistics* (Chicago, IL: American Hospital Association, 1980-1991 editions).

corresponded with the period after the introduction of Medicare's PPS. Similarly, the number of outpatient surgeries rose 262 percent, from 3 million in 1980 to 11 million in 1990 (see Figure 4-2).

The utilization of and capacity to provide ambulatory services has been accompanied by the increasingly important role of hospital outpatient revenue. Revenue from this source represented nearly 20 percent of all hospital revenues in 1990 compared with 11 percent in 1980, an increase of about $40 billion. The importance of outpatient revenue also varies by hospital size; smaller hospitals receive more of their revenue from outpatient services than larger hospitals.

Figure 4-2. Hospital-Based Ambulatory Surgery, 1980–1990



SOURCE: *Socio-Economic Factbook for Surgery*, 1991–92 (Chicago, IL: American College of Surgeons, 1991), Table D–6.

The Medicare program spent $11.7 billion on hospital outpatient and clinical laboratory services in 1991, an increase of 450 percent over 1980.[7] These were the most common types of services Medicare beneficiaries received. Radiology services were the second most common. Surgical services accounted for 7 percent of total encounters but more than 23 percent of all charges in fiscal year 1990.[8]

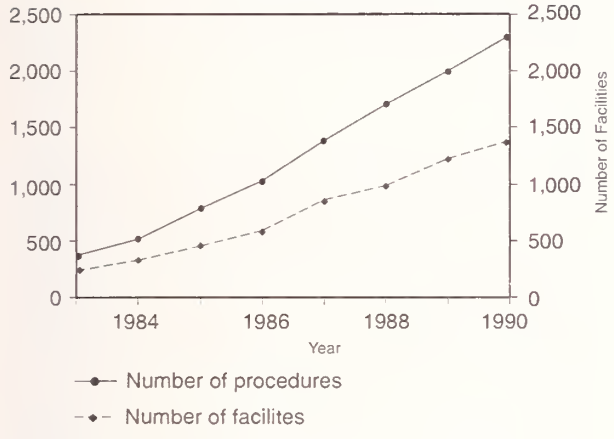
In general, the growth of ambulatory expenditures is due to the more frequent provision of tests and procedures rather than to more evaluation and management services. A recent study found that imaging procedures were the fastest-growing category of services. The newer technologies—CT scans, MRI, and sonography—accounted for most of this growth. Between 1985 and 1988, the average annual rate of increase in CT scans was 19 percent; for MRIs it was 408 percent, and for echocardiography, 34 percent.[9]

Additionally, outpatient surgical procedures such as endoscopies and cataract surgery increased at rapid rates. Between 1985 and 1988, the number of sigmoidoscopies grew 20 percent a year; there was a 60 percent annual increase in arthroscopies, and a 14 percent rise in cataract lens implants. The expansion of outpatient surgical services has had a major influence on overall Medicare Part B services. One study estimated that in five states, 40 percent of the increase in Part B expenditures from 1983 to 1985 was attributable to outpatient surgery.[10]

Alternatives to Hospital Outpatient Departments

Federal and third-party payment policies have introduced financial incentives that reduced inpatient care as well as encouraged the continued growth and diversification of ambulatory care facilities that directly compete with hospitals. The development of technologies and lack of volume constraints for non-inpatient care services have also been crucial to the proliferation of alternative sites of care. In addition, the same changes in consumer demand and physician practice patterns that contributed to the growth of ambulatory care delivered by hospital outpatient departments have fostered the expansion of alternative sites of care.

Figure 4-3. Growth of Free-Standing Surgical Centers, 1983–1990



SOURCE: *Socio-Economic Factbook for Surgery, 1991–92* (Chicago, IL: American College of Surgeons, 1991) Table D–7.

Table 4-20. Free-Standing Ambulatory Care Providers

Provider Type	Number of Medicare-Certified Providers
Comprehensive outpatient rehabilitation facilities	184
Cancer centers*	
Ambulatory surgical centers	1,165
Ambulatory care centers*	
Diagnostic imaging centers*	
Lithotripsy centers*	
Cardiac catheterization laboratories*	
Dialysis centers	1,987
Independent clinical laboratories	4,828
Outpatient psychiatric clinics*	
Pain clinics*	

* Medicare considers these providers to be either physician offices or hospital-based units.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy, September 1990.

The leading competitor with hospitals for providing surgical procedures is the free-standing ambulatory surgical center (ASC). The number of ASCs grew from 239 in 1983 to 1,383 in 1990—a jump of 478 percent (see Figure 4-3). The number of procedures provided at ASCs also increased from 377,000 in 1983 to more than 2 million in 1990, a rise exceeding 500 percent. Advances in technology that have encouraged the increased use of ASCs include less invasive alternatives to surgery, medications and drug therapies that improve recovery time and reduce the risk of infection, and advances in anesthesia.

In addition to ASCs, numerous new sites of ambulatory care have emerged and been marketed by physicians, hospitals, for-profit entrepreneurs, and other entities (see Table 4-20). Diagnostic imaging centers are a case in point. The growth of these facilities has been dramatic since 1984, most likely in response to third-party reimbursement for imaging services and rapid advances in imaging technologies. For payment purposes, Medicare does not separately recognize these facilities and reimburses them as either physicians' offices or hospital-based units.

It is not clear that the diffusion of ambulatory services into these other sites has increased access or improved efficiency. Research sponsored by the Florida Health Care Cost Containment Board found that the proliferation of physician joint ventures in laboratories, diagnostic imaging centers, and other facilities resulted in substantial overuse of services and higher charges. Moreover, the increase in the number of these providers did not improve access to care.[11]

Physicians and Other Providers

Physicians' offices are the most common site for ambulatory care. The number of physicians rose by 28 percent between 1980 and 1989 (see Table 4-21). This was considerably faster than the rate of population growth and represented an 18 percent increase in physicians per capita. It has been estimated that each additional physician adds an annual $350,000 to the health care system.[12]

Physicians have also increasingly entered specialized fields, which may affect the overall utilization of certain procedures, especially endoscopies and nonsurgical cardiac procedures. Compared with physicians in solo practices, those in group practices are more likely to perform diagnostic procedures, particularly laboratory tests, in the office. Between 1980 and 1988, the number of group practices grew by 54 percent, from 10,762 to 16,579.

The last decade has also seen a rise in the number of non-physician providers. Among these are certified nurse midwives, physician assistants, clinical psychologists, clinical social workers, certified nurse anesthetists, and nurse practitioners. Hospitals are not the primary practice setting for most of these health professionals. About 33 percent of nurse practitioners, for instance, work in ambulatory care

Table 4-21. Number of Active Physicians and Dentists, 1965-1989

Year	Active Physicians			Dentists
	Total	Medical Doctors	Doctors of Osteopathy	
1965	288,700	277,600	11,100	95,990
1975	384,400	370,400	14,000	112,450
1980	457,500	440,400	17,100	126,200
1985	534,457	512,849	21,608	140,700
1989	587,454	560,937	26,517	148,300

SOURCE: Sonnefeld and others, "Projections of National Health Expenditures Through the Year 2000," *Health Care Financing Review* 13(1):1-28, Fall 1991.

settings; 30 percent practice in community and public health settings, and 27 percent in hospitals.[13]

CONCLUSIONS

Although the number of acute care hospitals has declined since the onset of PPS, there has been rapid growth in many other types of health care facilities. Medicare beneficiaries have more alternatives to inpatient hospital services as well as an increasing supply of services that can complement this care, including nursing and rehabilitation facilities.

This proliferation of non-hospital services can have different effects on beneficiaries. On the one hand, alternatives to hospital care like outpatient surgery may be preferred by patients and may result in care of a similar quality at a lower cost. However, it is important to monitor whether care is being furnished in alternative settings for purely financial reasons, such as increased payment to providers, at the risk of lowering the quality of care.

In addition, it is not always clear how the existence of complementary providers relates to the quality of care provided to Medicare beneficiaries. The incentive for hospitals to discharge patients earlier to alternative sites such as SNFs or rehabilitation facilities is not detrimental to quality if these facilities have the capability to care for the patients. If patients are being discharged in an unstable state so that the post-acute facility cannot properly care for them, however, problems may arise.

The increasing supply of Medicare-covered services complementary to hospital care, such as SNF or home health care, is also due partly to clarification of Medicare benefits and a decrease in claims denial rates. Supply of these services is associated with use; as supply increases, Medicare expenditures can be expected to rise. ProPAC will continue to monitor the greater use of these services and is also working on developing alternative payment methodologies that will provide incentives for their appropriate use.

Notes to Chapter 4

1. The capital costs associated with these new technologies are excluded from these estimates.

2. Exclusion from PPS is determined on a facility level. However, facilities with a low volume of Medicare cases (including those with no cases) do not have to file Medicare Cost Reports.

3. The largest increase in use occurred between 1989 and 1990 due to a court case that required HCFA to revise the eligibility and coverage manual and clarify the criteria for part-time and intermittent care. These changes, which became effective in July 1989, reduced provider concerns about retroactive coverage denials of intermittent and part-time care and included a provision for case management services.

4. John C. Langenbrunner and others, "Developing Payment Refinements and Reforms under Medicare for Excluded Hospitals," *Health Care Financing Review* 10(3): 91-107, Spring 1989.

5. American Hospital Association, *Hospital Statistics 1991-1992* (Chicago IL: AHA 1991).

6. Ibid.

7. See Prospective Payment Assessment Commission, *Outpatient Payment Policy Reform,* Interim Congressional Report C-92-02, March 1992, for a more detailed discussion of Medicare's outpatient payment methodologies.

8. Unpublished data, Health Care Financing Administration, Bureau of Policy Development.

9. Ibid.

10. Robert Berenson and John Holahan. "Sources of the Growth in Medicare Physician Expenditures," *Journal of the American Medical Association* 267(5):687-91, February 5, 1992.

11. Jean M. Mitchell, associate professor of economics and Elton Scott, associate professor of finance, Florida State University, "Physician Ownership Referral Arrangements," in testimony before the Subcommittee on Health and Oversight, Committee on Ways and Means, U.S. House of Representatives, Washington, DC, October 17, 1991.

12. James Kimmey, M.D., dean of the School of Public Health, St. Louis University Medical Center, "Long-Term Strategies for Health Care," in testimony before the Committee on Ways and Means, U.S. House of Representatives, Washington, DC, March 1992. See also Berenson and Holahan, "Sources of the Growth in Medicare Physician Expenditures."

13. U.S. Congress, Office of Technology Assessment, *Health Care in Rural America,* OTA-H-434 (Washington, DC: U.S. Government Printing Office, September 1990) 251.

Chapter 5

Issues Affecting Medicare Beneficiaries

Chapter 5

Issues Affecting Medicare Beneficiaries

The use of health care services and amount of out-of-pocket spending, along with access, patterns of care, and quality of care, all affect Medicare beneficiaries. Each of these issues in turn is subject to pressures to contain costs. This chapter addresses these areas to provide a more comprehensive picture of the status of health care delivered to beneficiaries.

Trends in enrollment, service use, and beneficiary liability for Medicare-covered services are first presented. Various types of supplemental insurance and the characteristics of beneficiaries who have such policies are described next. The discussion then turns to post-retirement benefits and the ability of American businesses to continue financing these.

Access to care is explored by looking at supply of services and utilization rates, especially for beneficiaries living in rural areas. Service to vulnerable rural populations is assessed by describing the characteristics of low occupancy rural hospitals and Medicare's Essential Access Community Hospital (EACH) program, which is designed to keep underused rural facilities open. The focus broadens beyond rural settings to highlight access to care furnished in skilled nursing facilities (SNFs).

To illustrate trends in the use of two frequently provided Medicare-covered services, the Prospective Payment Assessment Commission (ProPAC) undertook two analyses. One concerns episodes of acute myocardial infarction (AMI) or heart attack; it compares the care received during the entire episode for people who were hospitalized in urban or rural facilities. The other presents determinants of the type of post-acute care delivered to beneficiaries after they are hospitalized for hip fracture.

The chapter closes with observations on overall quality of care for beneficiaries. The various mechanisms that Medicare uses to regulate and monitor quality in inpatient and outpatient facilities are described.

THE MEDICARE PROGRAM

Nearly all of the nation's elderly have health insurance; about 95 percent receive this insurance through Medicare. The program is comprised of two parts: the Medicare Hospital Insurance (Part A) Trust Fund and Supplemental Medical Insurance (Part B). Medicare Part A coverage includes inpatient hospital, home health care, and limited skilled nursing facility care. Medicare Part B covers a portion of the cost of physicians' services, outpatient hospital services, outpatient dialysis, and medical supplies and durable equipment.

Eligibility for Part A is based on age, disability status, or having irreversible kidney failure (end-stage renal disease or ESRD). People over 65 who are entitled to cash benefits under Social Security are automatically eligible for Part A. The small number of those over 65 who are not entitled to these benefits may purchase Part A coverage at the full actuarial cost. People of any age who are permanently disabled may be eligible for Part A after a 29-month waiting period. People with ESRD are eligible for Part A after a three-month waiting period.

Part B of Medicare is a voluntary program open to everyone eligible for Part A. Even so, nearly 96 percent of elderly enrollees elect to participate in it. ESRD beneficiaries have a particular incentive to pay the Part B premium because it covers outpatient dialysis.

Enrollment and Utilization

In 1991, approximately 35 million Medicare enrollees were in Part A, Part B, or both (see Table 5-1). About 10 percent were disabled; the rest were

Table 5-1. Trends in Medicare Enrollment, 1980-1992 (In Millions)

Year[a]	Number of People		
	Total	Aged	Disabled
1980	28.5	25.5	3.0
1981	29.0	26.0	3.0
1982	29.5	26.5	3.0
1983	30.0	27.1	2.9
1984	30.5	27.6	2.9
1985	31.1	28.2	2.9
1986	31.7	28.8	3.0
1987	32.4	29.4	3.0
1988	33.0	29.9	3.1
1989	33.6	30.4	3.2
1990	34.2	30.9	3.3
1991[b]	35.0	31.6	3.4
1992[b]	35.5	32.1	3.4

[a] As of July of the specified year.

[b] Estimated.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy, and the Office of the Actuary.

over 65 or eligible because of ESRD. Between 1989 and 1990, the number of Medicare beneficiaries with ESRD grew by 9.2 percent to 162,730 people.[1]

The share of beneficiaries receiving services that Medicare covered grew from 63 percent to 78 percent between 1980 and 1989 (see Table 5-2). Enrollees using inpatient hospital services fell from 23.7 percent in 1980 to 19.2 percent in 1989, or 2.3 percent annually. Hospital admissions for those 65 and over decreased during the first three years after implementation of the prospective payment system (PPS). Since 1987, however, admissions have increased, but not as fast as the Medicare population. Overall, inpatient hospital use per enrollee has continued to diminish since PPS began, though at a slower rate than in the early years.

Beneficiary use of SNF and home health services has risen substantially. In 1989, 1.9 percent of enrollees used skilled nursing facilities, compared with 0.9 percent in 1980. The largest increase occurred between 1988 and 1989, due mostly to the Health Care Financing Administration's (HCFA) clarification of coverage guidelines and to the Medicare Catastrophic Coverage Act (MCAA) of 1988. Use of home health agency services climbed from 2.6 percent of enrollees in 1980 to 5.1 percent in 1989. The early spurt in utilization was due to the Omnibus Budget Reconciliation Act (OBRA) of 1980, which allowed more home health agencies to participate in Medicare. Recent growth is due partly to changes in coverage that expanded the number of beneficiaries eligible for services and broadened the scope of services the program would cover.

Beneficiary use of hospital outpatient services has also increased notably. In 1980, 27.5 percent of beneficiaries used these services, compared with 45.8 percent in 1989. This increase was due to the development of new technologies and changes in practice patterns, which resulted in a shift of services from inpatient to outpatient settings, as well as an absolute growth in the number of services provided.

Physician services were the most widely used Medicare benefit between 1980 and 1990. The proportion of beneficiaries using these Part B services in excess of the $100 deductible grew from 63 percent to 79 percent during the period.

Table 5-2. Aged and Disabled Persons Served by Medicare, Selected Years (Per 1,000 Enrollees)

Type of Coverage/Provider	Persons Served						Average Annual Percent Change
	1980	1982	1984	1986	1988	1989	1980-1989
Total	633.2	638.2	681.3	726.9	761.7	778.9	2.3%
Hospital Insurance (Part A)	240.6	251.4	239.9	211.0	207.6	206.2	-1.7
Inpatient hospital	237.1	243.5	229.0	203.2	197.5	192.3	-2.3
Skilled nursing facility	9.2	8.7	10.0	9.7	11.9	19.3	8.6
Home health agency	25.9	39.7	49.9	50.3	48.8	51.0	7.8
Supplementary Medical Insurance (Part B)	650.5	653.5	697.5	748.9	789.6	810.3	2.5
Physician	629.9	696.1	674.8	725.9	768.7	792.6	2.6
Hospital-provided outpatient services	275.1	297.3	332.2	399.6	447.6	458.1	5.8

Note: Rates based on enrollment in Part A, Part B or both, as appropriate.

SOURCE: Health Care Financing Administration, Bureau of Data Management and Strategy.

Table 5-3. Estimated Medicare Benefit Payments, 1980-1991

Year	Total Medicare		Part A		Part B	
	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change
1980	$36.5	--	$25.4	--	$11.0	--
1981	43.7	19.8%	30.6	20.3%	13.1	18.7%
1982	51.2	17.3	35.7	16.5	15.6	19.2
1983	58.1	13.5	39.9	11.8	18.2	16.7
1984	64.8	11.5	44.5	11.7	20.3	11.5
1985	69.9	7.9	47.1	5.8	22.9	12.8
1986	75.4	7.8	48.7	3.4	26.7	16.6
1987	81.7	8.4	50.9	4.5	30.8	15.4
1988	88.9	8.8	54.3	6.7	34.6	12.3
1989	100.0	12.5	61.6	13.4	38.4	11.0
1990	108.4	8.4	66.1	7.3	42.4	10.4
1991	119.7	10.4	71.6	8.3	48.1	13.4

Note: Payments reported here are incurred expenditures rather than outlays.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Medicare Payments

Total Part A and Part B Medicare expenditures climbed by 85 percent between 1984 and 1991. Preliminary estimates indicate that total payments in 1991 were about $120 billion, an increase of 10.4 percent compared with 1990 (see Table 5-3). Part A expenditures totaled $71.6 billion in 1991, 8.3 percent over 1990. By contrast, 1991 Part B expenditures of $48.1 billion represented a 13.4 percent rise in spending.

The rate of increase in Medicare expenditures grew faster than the rate of increase in the number of Medicare enrollees during the 1980 to 1991 period. Part A expenditures per enrollee climbed 6 percent between 1990 and 1991 to $2,047, while Part B expenditures per enrollee jumped almost 11 percent to $1,374 (see Tables 5-4 and 5-5).

In 1991, 53 percent of total Medicare expenditures—or $63.1 billion—were for inpatient hospital services, compared with $32.8 billion for physician services, $9.9 billion for outpatient hospital services, $5.6 billion for home health agency services, and $2.5 billion for SNF services (see Table 5-6). For each enrollee, Medicare spent an estimated $1,804 for inpatient services, $157 for home health agency services, and $72 for skilled nursing facility services. Since 1988, Medicare expenditures for home health agency services have risen more rapidly than for any other category. Expenditures

Table 5-4. Part A Expenditures Per Enrollee, by Type of Service, 1980-1991

Year	Total		Inpatient		Skilled Nursing		Home Health	
	Expenditures	Percent Change	Expenditures	Percent Change	Expenditures	Percent Change	Expenditures	Percent Change
1980	$ 893	--	$ 857	--	$ 14	--	$ 21	--
1981	1,055	18.1%	1,007	17.5%	16	7.5%	32	51.7%
1982	1,209	14.6	1,146	13.8	17	7.5	46	42.9
1983	1,328	9.8	1,252	9.2	18	4.8	58	25.9
1984	1,462	10.1	1,375	9.8	18	5.4	68	17.4
1985	1,514	3.6	1,424	3.6	19	0.8	70	3.1
1986	1,534	1.3	1,443	1.4	18	-1.9	70	-1.1
1987	1,571	2.4	1,480	2.6	19	6.8	68	-2.7
1988	1,647	4.8	1,541	4.1	29	49.1	72	6.4
1989	1,835	11.4	1,639	6.3	102	251.7	88	21.6
1990	1,931	5.2	1,724	5.2	71	-30.6	127	44.4
1991	2,047	6.0	1,804	4.7	72	1.6	157	23.8

SOURCE: Health Care Financing Administration, Office of the Actuary.

Table 5-5. Part B Expenditures Per Enrollee, by Type of Service, 1980-1991

Year	Total		Physician		Outpatient	
	Expenditures	Percent Change	Expenditures	Percent Change	Expenditures	Percent Change
1980	$ 387	--	$298	--	$ 70	--
1981	450	16.3%	349	17.3%	82	17.0%
1982	527	17.2	413	18.2	96	17.2
1983	608	15.2	475	15.1	110	14.4
1984	667	9.7	514	8.2	123	12.6
1985	736	10.4	553	7.6	141	14.4
1986	841	14.2	617	11.6	166	17.6
1987	951	13.2	685	11.0	191	15.3
1988	1,050	10.4	744	8.6	213	11.1
1989	1,144	9.0	807	8.5	226	6.4
1990	1,239	8.3	860	6.5	247	9.3
1991	1,374	10.9	938	9.1	282	14.0

SOURCE: Health Care Financing Administration, Office of the Actuary.

for hospital outpatient department services and physicians' services have also accelerated significantly. Between 1990 and 1991, outpatient expenditures climbed almost 17 percent; spending for physicians' services increased almost 12 percent.

Beneficiary Liability

The continuing escalation in Medicare spending directly affects program beneficiaries. They share financial responsibility for Medicare-covered services through premiums, copayments, deductibles, and charges that exceed the amount Medicare allows for physicians who do not accept assignment (called balance billing). In 1991, beneficiary liabilities were 22.5 percent of Medicare expenditures (including payments for Part B premiums), or 0.7 percentage points lower than in 1990 (see Table 5-7). These liabilities, however, are not necessarily out-of-pocket expenses because many beneficiaries have supplemental health insurance.

Starting in 1988, the inpatient hospital deductible has been increased annually based on the PPS update factor. Previously, the deductible was based on the average cost per inpatient day. When computed using this earlier methodology, the deductible

Table 5-6. Estimated Medicare Benefit Payments, by Type of Service, 1980-1991

Year	Part A						Part B			
	Inpatient		Skilled Nursing		Home Health Agency*		Physician		Outpatient	
	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change	Payments (In Billions)	Percent Change
1980	$24.4	--	$0.4	--	$0.8	--	$ 8.5	--	$2.0	--
1981	29.2	19.7%	0.5	9.5%	1.1	29.1%	10.1	19.5%	2.4	19.2%
1982	33.8	15.7	0.5	9.3	1.4	30.9	12.2	20.2	2.8	19.1
1983	37.6	11.2	0.5	6.7	1.8	28.3	14.3	17.2	3.3	16.4
1984	41.9	11.4	0.6	6.9	2.1	19.0	15.6	9.7	3.8	14.2
1985	44.3	5.7	0.6	2.9	2.2	5.3	17.2	9.8	4.4	16.8
1986	45.8	3.5	0.6	0.2	2.2	1.0	19.6	14.0	5.3	20.1
1987	48.0	4.7	0.6	9.0	2.2	-0.5	22.2	13.3	6.2	17.7
1988	50.8	5.9	1.0	51.7	2.4	8.5	24.5	10.5	7.0	13.1
1989	55.0	8.3	3.4	258.1	3.0	24.2	27.1	10.5	7.6	8.3
1990	58.9	7.1	2.4	-29.3	4.4	46.8	29.4	8.5	8.5	11.3
1991	63.1	7.1	2.5	4.0	5.6	27.3	32.8	11.6	9.9	16.6

Note: Payments reported here are incurred expenditures rather than outlays.

* Includes Part B home health agency expenditures.

SOURCE: Health Care Financing Administration, Office of the Actuary.

Table 5-7. Estimated Beneficiary Liabilities, 1980-1991

Year	Total Medicare			Inpatient Hospital		Other Medicare	
	Beneficiary Liability (In Billions)	Total Expenditures (In Billions)	Beneficiary Share of Total Expenditures[a]	Beneficiary Liability (In Billions)	Beneficiary Share	Beneficiary Liability (In Billions)[a]	Beneficiary Share
1980	$10.3	$ 36.5	22.1%	$1.7	6.7%	$ 8.5	41.5%
1981	12.1	43.7	21.8	2.0	6.5	10.1	41.2
1982	14.6	51.2	22.2	2.7	7.4	11.9	40.6
1983	16.3	58.1	21.9	3.2	7.8	13.1	39.0
1984	18.1	64.8	21.9	3.4	7.5	14.7	39.1
1985	19.1	69.9	21.5	3.4	7.1	15.7	38.0
1986	21.1	75.4	22.0	4.1	8.3	17.0	36.5
1987	23.5	81.7	22.5	4.5	8.7	19.0	36.0
1988	27.3	88.9	23.6	4.8	8.7	22.5	37.1
1989	29.7	100.0	23.0	3.6	6.1	26.1	36.7
1990	32.5	108.4	23.2	5.3	8.3	27.2	35.5
1991[b]	34.6	119.7	22.5	5.7	8.4	28.9	33.8

[a] Medicare Part B premiums are included in total Medicare beneficiary liabilities. Total expenditures are total Medicare expenditures.

climbed rapidly due to higher average costs per day that resulted from shorter lengths of stay, especially in the early years of PPS.

Beneficiaries were responsible for 8.4 percent of their total inpatient hospital bills in 1991. This is about the same proportion as in 1990 and before MCCA was implemented. MCCA, in effect during part of 1988 and 1989, reduced beneficiary liability by eliminating hospital coinsurance. Beneficiary liability as a proportion of total spending for inpatient services has held relatively constant, except for the short time when the MCCA was in effect. However, the absolute amount of liability has increased with the rise in Medicare expenditures.

For non-inpatient services, the proportion of payments for which enrollees are liable has declined over time. In 1991, beneficiaries covered, on average, 33.8 percent of these costs themselves, a 1.7 percentage point decline from 1990. Beneficiary liability for physician services may fall even more due to the ongoing implementation of physician payment reforms, such as those limiting the amount of balance billing. Alternative payment methodologies for hospital outpatient and SNF services, which HCFA is considering, may also affect beneficiary spending.

The inpatient hospital deductible for the first 60 days of care is $652 in 1992, a 3.8 percent increase from the 1991 level. The premium for Part B services is $31.80 a month ($381.60 per year) in 1992 compared with $29.90 a month ($358.80 per year) in 1991. The Part B deductible remains at $100 per year in 1992; a copayment of 20 percent for charges above the deductible is also required. In addition, beneficiaries face substantial copayments for skilled nursing facility stays exceeding 20 days. In 1992, this is $81.50 per day.

Along with some liability for Medicare-covered services, beneficiaries must pay for other services. Total out-of-pocket health expenditures for both covered and noncovered services per elderly family were $3,305 in 1991, an increase of more than 100 percent since Medicare enactment in 1965 and of 22.5 percent since PPS implementation (see Table 5-8). From 1984 to 1991, nursing home care was the elderly population's largest average out-of pocket expense, accounting for about 36 percent of spending. Services Medicare did not cover were the second largest category in 1991.

SUPPLEMENTAL INSURANCE

Because out-of-pocket expenses may be quite large and beneficiaries may want to limit this spending, most have supplemental insurance protection (see Figure 5-1). About 79 percent of beneficiaries have additional coverage. Supplemental insurance includes medigap policies (which typi-

Table 5-8. Per Family Out-of-Pocket Health Expenditures by the Elderly, Selected Years (In 1991 Dollars)

Health Expenditures	1961		1984		1989		1991	
	Expenditures	Percent of Total	Expenditures	Percent of Total	Expenditures	Percent of Total	Expenditures	Percent of Total
Total	$1,589	100.0%	$2,698	100.0%	$3,249	100.0%	$3,305	100.0%
Direct out-of-pocket	1,285	80.9	1,898	70.3	2,262	69.6	2,332	70.6
Hospital	228	14.3	83	3.1	91	2.8	90	2.7
Physician	316	19.9	424	15.7	392	12.1	408	12.3
Nursing home	287	18.1	972	36.0	1,173	36.1	1,194	36.1
Other	454	28.6	419	15.5	606	18.7	640	19.4
Insurance	304	19.1	800	29.7	987	30.4	973	29.4
Private	304	19.1	553	20.5	619	19.1	653	19.8
Medicare premium	NA	NA	247	9.2	368	11.3	320	9.7

Note: Data for health expenditures other than nursing home care for 1961, 1984, and 1989 are based on the Consumer Expenditure Survey. Nursing home care was added based on estimates from the Office of National Cost Estimates and the Brookings/ICF Long-Term Care Financing Model. NA = not applicable.

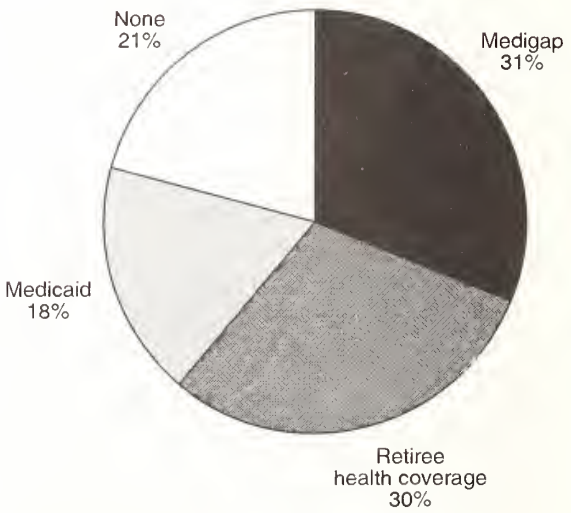
SOURCE: Families USA Foundation, *The Health Cost Squeeze on Older Americans*, February 1992.

cally are purchased by the individual), retiree health coverage offered through a former employer, or assistance under Medicaid. In 1991, about 61 percent of Medicare beneficiaries had some sort of private supplemental insurance: 31 percent had individual medigap insurance and 30 percent had employment-based group retiree health plans. Another 18 percent received benefits under Medicaid; these individuals are called dual-eligibles.[2] About 21 percent of beneficiaries have no supplemental insurance. One study estimated that for people 65 and older, average annual supplemental insurance premiums ranged from $550 to $725 per family.[3]

If beneficiaries had not had supplemental insurance, about 66 percent would have experienced out-of-pocket expenses ranging from $1,000 to $2,000, according to Congressional Budget Office (CBO) 1991 estimates; 17 percent would have had expenses of $2,000 or more, while about 3 percent would have faced expenses of $5,000 or more. CBO estimated that the average out-of-pocket expense for a beneficiary without supplemental insurance was $1,495, which includes Medicare Part B premiums, Medicare copayments, and prescription drug costs.[4] Thus, without supplemental insurance, many elderly people would face financial barriers to care.

The type of supplemental insurance coverage enrollees are likely to obtain varies by income (see Table 5-9). Medicare enrollees with higher incomes are more likely to have private supplemental insurance than are those with low incomes or disabilities, who are likelier to receive supplemental coverage from Medicaid. Beneficiaries in the middle-income range may be exposed to the greatest financial liability for medical costs. Estimates for 1991 indicate that enrollees with private supplemen-

Figure 5-1. Supplemental Health Insurance Coverage of the Elderly, 1991 (In Percent)



SOURCE: Congressional Budget Office estimates, 1991.

Table 5-9. Characteristics of Medicare Enrollees, by Type of Supplementary Coverage, 1991

Supplementary Coverage	Enrollees (In Percent)	Per Capita Income	Percent of Population: Disabled Under Age 65	Impaired*	Uses Hospital Insurance Services	Age 85 or Over	Women
Overall	100.0%	$18,279	9.5%	16.6%	19.8%	9.0%	58.8%
None	21.1	17,486	14.8	20.4	17.4	10.2	56.0
Retiree health plan	30.4	22,464	8.1	12.5	19.0	5.5	54.0
Individual medigap plan	30.7	20,919	3.2	11.5	20.7	9.8	60.0
Qualified Medicaid benefits	8.7	5,172	13.5	24.3	21.1	10.5	66.2
Full Medicaid benefits	9.1	9,385	19.2	31.1	23.8	13.5	70.4

* Limited in the ability to perform one or more activities of daily living.

SOURCE: Congressional Budget Office tabulations from the Medicare benefits model.

tal insurance had an average per capita income of $20,000. For those who were eligible for Medicaid, per capita income was less than $10,000; for those without any supplemental insurance, it was $17,500.[5]

Medigap Policies

Medigap policies typically provide coverage for the entire Medicare inpatient (Part A) deductible and the 20 percent coinsurance payment for physician services (Part B); the deductible for Part B services is usually not covered. The level of coverage under medigap policies varies, as is evident for prescription drugs and physician services provided outside of the hospital.

Concerns have been raised about whether medigap policies adequately protect beneficiaries from out-of-pocket costs. Legislation was enacted in 1980 to ensure that these policies offered protection not provided by Medicare. Medigap policies are now subject to Section 1882 of Title XVIII of the Social Security Act, known as the Baucus Amendment. This amendment mandated Federal standards for marketing and selling medigap policies. The Baucus Amendment was modified in 1988 under the Medicare Catastrophic Coverage Act and again in 1989 when the MCCA was repealed. Currently, the Baucus Amendment stipulates that medigap policies must cover either all or none of the Part A deductible and all Part B copayments for services once the policyholder has paid the Part B deductible for a given year.

The Baucus Amendment also established standard target loss ratios. These ratios compare the amount of money enrollees received as benefits with the amount they paid in premiums. Low loss ratios indicate that the beneficiary is receiving too little for each premium dollar. Target loss ratios under the Baucus Amendment are 60 percent for individual medigap policies: That is, for every dollar a beneficiary pays in medigap premiums, at least 60 cents is to be paid out in benefits.[6] However, the loss ratio requirements have not been enforced. Further, coverage standards have been so minimal that some experts argue the policies have not provided a reasonable level of protection against beneficiary out-of-pocket health care costs.[7]

Recently, more stringent legislation has been enacted to protect beneficiaries. Under OBRA 1990, loss ratio standards for individual medigap policies rose from 60 percent to 65 percent. The law requires that consumer assistance information be provided to potential purchasers. In addition, all medigap policies must conform to one of 10 standard policy designs. Anyone who sells a policy that does not comply with these standards may be fined up to $25,000. Simplifying the selection of plans and imposing strict penalties for noncompliance are intended to reduce the potential for abuse in marketing Medicare supplemental insurance.[8]

Retiree Health Benefits

Retiree health plans were introduced during the 1960s and 1970s when the costs of medical plans were relatively low. Following the passage of Medicare, employers increasingly offered retiree health benefits largely because the program would be the primary payer for retirees over the age of 65.[9] These benefits typically are provided through an employer's group health plan to retirees who are 55 or older and their dependents; retirees are often

required to have worked for a firm from 10 to 15 years, although specific eligibility requirements vary by employer.[10] Health coverage for retirees under 65 is usually similar to that provided to active employees. It is less expensive than a policy with similar coverage that the retiree could purchase individually, because of lower administrative and marketing costs. For retirees over 65, expenses not paid by Medicare are partially or completely covered.[11]

A 1990 survey of employers representing businesses of varying sizes, industries, and locations indicated that more than 53 percent offered coverage to all retirees. Retiree health coverage was most prevalent among large firms. More than 75 percent of survey respondents with 1,000 or more active employees offered such coverage, compared with less than 50 percent of smaller-sized employers. Industries with a strong union presence—utilities, education, and transportation—were more likely to have provided retiree health coverage.[12]

Employer-sponsored health plans are designed so that costs of services are not paid both by their plans and by the Medicare program. The Medicare "carve-out" plan is the most common, accounting for about 75 percent of these plans. Under carve-out plans, retirees receive similar coverage as active employees and are responsible for the same copayments and deductibles; costs that Medicare covers are deducted from the employer's plan.[13] Another common plan design is the Medicare supplement. Under this plan, the Medicare-eligible retiree receives 100 percent coverage of Medicare-allowed services, as well as additional services that Medicare does not cover but that are included in the supplemental plan. Coinsurance and deductibles may apply. Regardless of plan design, spouses of retired employees are usually covered but may have to pay a premium.[14]

Employers traditionally accounted for retiree health benefits on a cash basis: The company's liability was recognized as it was paid to the employee. However, in response to growing concerns about the financing of retiree health benefits, the Financial Accounting Standards Board (FASB) issued new accounting standards (Financial Accounting Standards 106) that require companies to recognize on their current financial statements their long-term liabilities for retiree health benefits. FASB's requirements go into effect in 1993 for most firms.[15] With the new standards, funds for retiree health benefits will be accumulated over the duration of each employee's years of service. This change is estimated to increase employers' recognized annual costs of retiree health benefits by two and one-half to seven times current levels, which is likely to affect the perceived financial performance of businesses.[16]

Changes in Medicare payment policy have contributed to employers' concerns regarding retiree health benefits. Recent changes have shifted to employers costs for both their older workers and retirees. For example, the Medicare secondary payer provisions, which have been implemented over the last several years, require certain employers to offer their disabled employees and employees 65 and over the employer's group health plan as the primary source of insurance.

Employers have responded to the changing environment by seeking ways to reduce or discontinue retiree health benefits. Many employers have attempted to shift more of the costs to retirees through various cost sharing strategies. Common changes to benefit packages include reducing benefits, tightening eligibility requirements, and increasing deductibles and coinsurance.[17]

Some employers think that retiree obligations may affect their ability to stay in business. One corporate response to this perception has been to terminate retiree health plans through bankruptcy proceedings. The Retiree Benefits Bankruptcy Protection Act of 1987 provides some protection to retirees by requiring, for example, that payments for retiree health benefits receive top priority in bankruptcy proceedings.[18] However, the General Accounting Office found that 19 of 40 bankrupt companies quit paying these benefits. Several of these businesses—primarily banks, savings and loan institutions, and insurance companies—were not covered by bankruptcy legislation or filed for bankruptcy before the law became effective.[19]

Medicaid

Medicaid provides additional health care protection to poor Medicare beneficiaries. In 1991, about 18 percent of Medicare enrollees were dual-eligibles (qualifying for coverage under both Medi-

care and Medicaid). Of these, half received full Medicaid benefits, which included some services not covered by Medicare and Medicare Part B premiums and copayments for Medicare-covered services. The other half were poor but did not qualify for Medicaid, as specified by the eligibility criteria of their states. They applied for qualified Medicaid benefits, which only cover payment of Medicare premiums and copayments.[20]

For Medicare beneficiaries who receive full Medicaid benefits, family income ($9,385), is about 70 percent above the poverty level according to 1991 CBO estimates. For those dual-eligibles with qualified Medicaid benefits, the average family income of $5,172 is about 20 percent below the poverty level.

ACCESS

Access to care is more easily defined than measured. It usually means that people are able to get the medical services they need when they need them. Medicare beneficiaries face significant barriers to access for financial reasons and for reasons related to the structure of the health care system itself. Financial barriers, such as lack of supplemental health insurance or large out-of-pocket payments, may discourage beneficiaries from receiving needed care. Structural barriers include lack of certain medical services in the local area or difficulty in reaching facilities that provide needed care.

Financial barriers impeding access to care were discussed in the preceding section on beneficiary liability. This discussion focuses on structural barriers, especially those affecting beneficiaries who live in rural areas. ProPAC has long recognized that these beneficiaries may have difficulty receiving appropriate services if providers are not readily available. Hospital closures, which occur more often in rural areas, are illustrative. The following section presents data on low occupancy rural hospitals that are at risk of closure. Next, the EACH program, which Medicare implemented to address the underutilization of rural hospitals, is described. The section concludes by discussing factors related to beneficiary use of SNF services.

Low Occupancy Rural Hospitals

The closing of a hospital may create a barrier to access by leaving Medicare beneficiaries with no alternative health care provider. On the other hand, if beneficiaries did not use the facility even before it closed, closure may have little effect on access. In certain instances, then, hospital closure may simply be a sign of greater efficiency in the health care industry. This may not be the case in rural areas, however, which typically have fewer available health resources than urban areas. The closing of a rural community hospital may affect beneficiaries' access to needed services more than the closing of a comparable urban hospital.

A total of 45 community hospitals closed during 1991—a decline from 1990 when 50 community hospitals closed and the continuation of a downward trend that began in 1988. Whereas 22 urban hospitals closed in 1990, only 16 did so between 1990 and 1991. This compares with 28 rural hospital closures in 1990 and 29 in 1991.[21]

Recent analyses by ProPAC and others suggest that declining volume is a major determinant of hospital financial performance and may indicate whether a hospital is likely to close. The Commission examined characteristics of low occupancy rural hospitals to assess the role these facilities play in ensuring access to care for rural beneficiaries. The following analysis describes the services these hospitals provide. To the extent that these services are needed in their respective communities, low utilization may be a reason for concern if it is associated with financial vulnerability. Characteristics of beneficiaries treated at these hospitals were also examined. Again, if these rural facilities are a significant source of care, they may warrant special attention.

Low occupancy hospitals generally are found in sparsely populated counties having more land area than is the case for facilities with high occupancy rates. This relationship is much stronger for rural than for urban hospitals. Low occupancy small rural hospitals are located in rural counties with 12.5 people per square mile, on average, compared to 32.6 people per square mile in rural counties with high occupancy hospitals. In addition, these hospitals are located in extremely large counties of 16,131 square miles, on average, whereas high occupancy rural facilities are in smaller counties averaging 1,516 square miles. It appears that low occupancy rural hospitals do not have the population base necessary to sustain high occupancy rates.

Low occupancy rural hospitals are less likely to offer many common services than are their high occupancy counterparts, regardless of size. Although almost all rural hospitals offer emergency room services, for instance, 10 percent of high occupancy rural hospitals have a trauma center, compared to only 2 percent of low occupancy rural hospitals. Three-quarters of high occupancy rural hospitals have a blood bank, while only half of low occupancy hospitals furnish this service. In addition, high occupancy rural hospitals provide more emergency and nonemergency outpatient visits than do low occupancy hospitals.

Low occupancy rural hospitals have a slightly higher percentage of Medicare patients than the highest occupancy rural facilities (see Table 5-10). They also see a higher percentage of the very old—people 85 and older. On the other hand, they do not serve more Medicaid patients, more disabled Medicare beneficiaries who are younger than 65, or substantially more dual-eligibles than comparable high occupancy rural hospitals. Low occupancy rural hospitals seem to treat less severely ill patients, as measured by a lower case-mix index and lower proportion of surgical patients (see Table 5-11). Further, a slightly larger percentage of people die during hospitalization in the facilities with higher occupancy rates, possibly because they treat sicker patients.

In short, even though low occupancy rural hospitals serve an older group of beneficiaries, these patients do not seem to be more disabled, more severely ill, or poorer than patients in high occupancy hospitals. Other indicators of vulnerability, including whether low occupancy hospitals serve a disproportionate share of the uninsured, should be explored further.

Essential Access Community Hospital Program

Many small rural hospitals are underutilized. The previous analysis indicates that these hospitals are not likely to have the population base necessary to support a full-service hospital. To address this concern, Medicare established the Essential Access Community Hospital program to restructure the delivery of services in rural areas to match the needs of certain local communities more appropriately. The program was authorized by Congress under OBRA 1989 as a seven-state demonstration project with two explicit goals: to ensure access to care by providing emergency services and an entry point for inpatient care; and to reduce the cost of providing appropriate care, primarily through downsizing inpatient capacity.

The program requires each state to develop a rural regionalization plan with two levels of care and corresponding facilities. Rural primary care hospitals (RPCHs) provide emergency care and temporary inpatient care for cases in which stabilization is required prior to discharge or transfer; these hospitals are limited to operating six or fewer beds and may hold patients no longer than 72 hours. Essential access community hospitals are full-service referral hospitals; they must have a minimum of 75 beds. This dual level of care may better ensure access to critical care services in communities that might otherwise have serious deficiencies in their health care systems.

Table 5-10. Potential Vulnerable Populations, Low and High Occupancy Hospitals (In Percent)

	Medicare Patients		Medicaid Patients		Age 85 and Over		Under Age 65		Dual-Eligibles	
Hospital Group	Low	High	Low	High	Low	High	Low	High	Low	High
All hospitals	44.5%	34.3%	11.2%	12.3%	17.6%	11.8%	7.7%	11.2%	2.6%	2.3%
Urban	38.6	33.2	11.6	11.9	14.7	11.5	11.6	11.3	4.3	2.5
Rural	46.3	39.4	11.1	13.8	18.5	13.3	6.5	11.1	2.1	1.4
Rural <25 beds	47.3	47.8	8.3	8.4	19.8	19.9	4.7	8.1	2.9	0.9
Rural 25-49 beds	47.8	43.4	10.4	15.5	19.1	15.0	6.2	11.0	2.3	2.4
Rural 50-99 beds	44.0	37.9	13.7	15.8	17.1	13.6	8.0	11.2	1.5	1.9
Rural 100+ beds	39.0	37.2	14.7	13.2	14.4	11.1	8.6	11.6	0.5	0.8

Note: All estimates are hospital-weighted.

SOURCE: ProPAC analysis of 1989 MedPAR and 1989 Medicare Cost Report data.

Table 5-11. Characteristics of Medicare Patients in Low and High Occupancy Hospitals

Hospital Group	Case-Mix Index		Percent in Surgical DRGs		Percent Died in Hospital		Percent with Four Secondary Diagnoses		Percent with No Surgical Procedures	
	Low	High	Low	High	Low	High	Low	High	Low	High
All hospitals	1.08	1.31	13.7%	27.6%	5.7%	6.9%	46.3%	53.3%	65.9%	33.5%
Urban	1.16	1.34	23.4	29.2	5.6	7.0	47.1	53.4	50.1	30.7
Rural	1.05	1.16	10.8	19.4	5.7	6.4	46.1	52.9	70.7	47.5
Rural <25 beds	1.00	0.97	6.4	5.9	4.8	5.4	41.0	42.9	76.5	62.1
Rural 25-49 beds	1.04	1.04	10.1	10.0	5.7	5.9	45.3	49.5	72.3	64.5
Rural 50-99 beds	1.09	1.14	13.2	18.4	6.2	6.2	50.0	53.4	66.5	48.9
Rural 100+ beds	1.14	1.25	19.5	25.9	5.9	6.8	50.6	55.8	55.6	37.9

Note: All estimates are hospital-weighted.

SOURCE: ProPAC analysis of 1989 MedPAR and 1989 Medicare Cost Report data.

The basic concept of regionalization promoted by the EACH program should encourage more efficient use of scarce health care labor resources in isolated communities and may help to contain costs. However, there are at least three major concerns with the legislated design of the program. First, the requirement limiting RPCHs to six inpatient beds appears to be arbitrary. This limitation may discourage hospital participation in the program and could prevent RPCHs from using existing capacity when needed to treat patients requiring emergency care. Second, the stipulation that EACHs maintain a minimum capacity of 75 beds also appears to be arbitrary and could result in unnecessary bed capacity or the exclusion of smaller hospitals with an adequate spectrum of services. The proposed three-day limit in RPCHs is also problematic. Besides being arbitrary, this constraint may keep patients who require slightly longer stays from being cared for in RPCHs.

Skilled Nursing Facility Services

Beneficiary use of the Medicare SNF benefit varies dramatically by geographic region. Although this variation may be due partly to practice pattern differences and the types of long-term services available, it may also indicate that access is a problem for some beneficiaries. Patients admitted to nursing homes under the Medicare SNF benefit have greater care needs, on average, than other nursing home patients. Not all facilities are equipped to provide the more intensive services these patients require. Evidence indicates that Medicare patients with special rehabilitation needs or with behavioral or cognitive problems may face additional barriers to SNF care.[22]

A recent study of post-acute care use found a more than thirtyfold variation in use of SNF services by state.[23] While 2.3 percent of enrollees on average used SNF services in 1988, use ranged from 0.2 percent in Mississippi to 6 percent in Minnesota. Regional patterns of use for all types of services were a significant predictor of an individual's use of SNF services for a specific condition.

Access to SNF services may be affected by state licensure and quality assurance requirements, Medicaid program characteristics, and states' regulations of the supply of services through Certificate of Need programs. Most states' licensure requirements are identical to Federal certification requirements. Some states, however, have more stringent criteria that may enhance the ability of SNFs to care for Medicare beneficiaries, who generally need more care than other patients.

State Medicaid programs are the dominant payers of nursing home services. They provide 45 percent of payments and cover more than 60 percent of nursing home patients. Thus, Medicaid has a substantial influence on the characteristics of the nursing home market within a state. By contrast, Medicare accounts for less than 5 percent of nursing home payments, and Medicare SNF patients make up a small minority of nursing home patients. Accordingly, Medicaid payment rates and policies may influence access to SNF services for Medicare beneficiaries.

The supply of Medicare-certified SNF beds affects use of the SNF benefit. Supply of these beds varies dramatically by state, although this may change with the OBRA 1987 regulations. (See Chapter 4.) In addition, some states exert considerable control over the number and type of nursing home beds through their Certificate of Need programs.

Facilities located in states with more generous Medicaid payments may offer the more intense services needed to treat Medicare beneficiaries and may be likelier to admit Medicare patients. On the other hand, higher Medicaid payment rates may increase the desirability of treating Medicaid patients, making facilities less likely to admit Medicare patients. Reimbursement systems that tie a facility's Medicaid rate to its average cost may offer nursing homes incentives to admit costlier Medicare patients.[24]

In short, Medicare beneficiary access to SNF services depends on several factors, including constraints on the supply of Medicare-certified SNF beds, Medicaid program characteristics, and state licensure. Most of these factors are beyond the control of the Medicare program. Any effort to improve access to SNF services for beneficiaries will have to recognize the important role played by states through their respective Medicaid programs.

PATTERNS OF CARE ANALYSES

The Commission has begun to examine the patterns of care provided to Medicare beneficiaries over the course of their treatment, using an episode of illness methodology. These analyses focus on beneficiaries' use of services across sites of care. By incorporating information on all services beneficiaries receive incident to a particular condition or illness, potential access or quality issues may become apparent. Significant variations in the use of services across groups of beneficiaries or geographic areas may indicate appropriate treatment pattern differences. On the other hand, variations may also indicate inadequate access to needed services. Similarly, significant variation in service use may point to potential instances of inadequate or low quality of care.

Presented here are two preliminary analyses of patterns of care. The first focuses on the treatment of patients admitted to a hospital for an acute myocardial infarction (AMI) or heart attack. It compares treatment patterns for beneficiaries admitted to urban and rural hospitals. The second examines the use of post-acute care services by Medicare beneficiaries hospitalized for hip fracture.

Patterns of Care for Acute Myocardial Infarction

Using 1988 data, episodes of care were constructed for people who were hospitalized for any diagnosis of AMI. The "trigger event" is defined as the initial hospital admission for AMI. The period included in the episode spans the 60 days before the AMI that caused the hospitalization and the 90 days after the admission. All Medicare-covered services provided during this time were examined for each beneficiary. A total of 30,822 cases were included in the analysis. Data were not available on outpatient or physician services for about half of the beneficiaries in the sample. If the length of stay for the trigger event lasted three or fewer days, the episode was excluded from the analysis so long as the person did not die. Consultation with medical professionals indicated that these cases were likely to have been "rule-outs." These are cases where the patient was admitted to the hospital for a possible heart attack but was not diagnosed as having had one.

The largest determinant of charges for the entire episode of illness was whether cardiac bypass surgery (CABG) was performed. Episodes with a CABG were twice as expensive as those without one. Charges per AMI episode also varied by the number of hospitalizations within the episode. AMI patients with more hospitalizations had higher charges for the episode. Total episode charges varied only slightly by the presence of comorbid conditions.

Patients hospitalized in an urban hospital for their heart attack were more likely to have selected cardiac procedures performed during their episode than patients hospitalized in a rural hospital (see Table 5-12). Of AMI patients in urban hospitals, 38 percent had a cardiac procedure, compared with 27 percent of patients in rural hospitals; 31 percent of patients hospitalized in urban facilities had a cardiac catheterization compared to 22 percent of those hospitalized in rural facilities. These figures

Table 5-12. Procedures Performed During Episodes of Acute Myocardial Infarction, by Hospital Group (In Percent)

Hospital Group	Cardiac Catheterization	Percutaneous Transluminal Coronary Angioplasty	Coronary Artery Bypass Graft	Any Cardiac Procedure	Any Non-Cardiac Procedure	No Cardiac Procedures
All hospitals	29.0%	7.6%	9.4%	34.9%	32.3%	32.8%
Urban	31.2	8.4	10.0	37.6	33.8	28.6
Rural	22.0	5.0	7.7	26.7	27.3	45.5
Large urban	29.2	7.7	9.4	36.1	36.0	27.9
Other urban	33.5	9.2	10.6	39.2	31.5	29.3
Rural referral	25.9	6.4	9.9	31.7	30.8	37.4
Sole community	22.0	5.2	6.8	26.1	28.3	45.6
Other rural	20.1	4.2	6.9	24.4	26.1	49.5
Major teaching	34.6	8.6	10.9	42.0	40.8	17.1
Other teaching	32.3	8.8	10.5	38.9	33.4	27.7
Non-teaching	26.6	6.8	8.7	32.0	30.8	37.2

Note: Hospital group is determined by the location of the trigger hospital; that is, the hospital to which the patient was admitted for the acute myocardial infarction.

SOURCE: ProPAC analysis of 1988 Medicare episode of illness data constructed by Abt Associates Inc.

include procedures even if they were performed during rehospitalizations. Therefore, even if the most severe AMI cases in rural facilities were transferred or readmitted to large urban hospitals, they are included in the rural hospital counts. Teaching hospitals were the most likely to perform a cardiac procedure on an AMI patient.

Patients admitted to an urban hospital after a heart attack had both longer lengths of stay following the incident and longer lengths of stay for the entire episode of illness (see Table 5-13). However, mortality rates during the episode were similar, whether these patients were admitted to urban or rural hospitals. The probability of dying during the hospitalization for the AMI was also similar for rural and urban episodes, although the proportion of patients dying during the initial hospitalization for AMI was higher in teaching hospitals. This could be because severe cases were more likely to

Table 5-13. Length of Stay and Mortality for Episodes of Acute Myocardial Infarction, by Hospital Group

Hospital Group	Episode Length of Stay (Days)	Trigger Hospitalization Length of Stay (Days)	Percent Alive at End of Episode	Percent Dying During Trigger Event
Urban	14.9	13.0	71.9%	57.1%
Rural	9.7	7.5	71.4	52.7
Large urban	15.4	9.0	72.2	56.2
Other urban	14.3	9.4	71.5	58.1
Rural referral	14.2	8.7	73.4	54.6
Sole community	12.6	7.0	71.3	50.9
Other rural	12.5	7.1	70.5	52.3
Major teaching	17.3	11.8	72.5	59.2
Other teaching	15.0	10.1	71.4	59.4
Non-teaching	13.8	8.3	71.9	53.9

Note: Hospital group is determined by the location of the trigger hospital; that is, the hospital to which the patient was admitted for the acute myocardial infarction.

SOURCE: ProPAC analysis of 1988 Medicare episode of illness data constructed by Abt Associates Inc.

go to teaching hospitals. There was also higher mortality during the hospitalization for the AMI in rural referral centers, which probably admit more severe cases, than in other rural hospitals.

Mortality also varied significantly by whether patients had another hospitalization before or after admission for their heart attack. Patients with hospitalizations prior to their heart attack had the highest mortality, followed by patients whose only hospitalization was for their AMI. Patients rehospitalized after their heart attack had the highest survival rates. Having a hospitalization preceding the heart attack seems to be a proxy for the severity of the AMI. Persons who were readmitted for procedures like bypass surgery may be the least severe cases.

AMI cases admitted to rural hospitals were far more likely to be transferred than those admitted to urban hospitals (see Table 5-14). Rural cases were not, however, readmitted during the episode as often as urban cases. Major teaching hospitals transferred patients less often than other hospitals, and rural referral centers transferred them somewhat less frequently than other rural facilities. AMI patients admitted initially to rural referral centers were more likely than patients in other rural facilities to be readmitted to urban hospitals. Interestingly, major teaching hospitals readmitted AMI cases more often than did non-teaching hospitals. This could indicate that teaching hospitals were more likely to initiate a new admission for procedures such as CABGs and percutaneous transluminal coronary angioplasty.

Patients admitted to urban hospitals for their heart attack had higher total episode charges than did patients admitted to rural hospitals (see Table 5-15). This finding is consistent with the longer lengths of stay and higher procedure rates for patients admitted to urban hospitals. Charges were higher for all types of services (except outpatient) as well. Major teaching hospitals had the highest charges, as expected.

This analysis is one of ProPAC's initial investigations of differences between urban and rural patterns of care. Patients hospitalized for a heart attack in a rural hospital had lower total episode charges, shorter hospital stays, and fewer procedures performed than patients hospitalized in an urban facility. This could raise concerns about possible inadequate access or quality of care experienced by persons admitted to rural hospitals for their heart attack, except that there were no differences in mortality between patients admitted to urban and rural hospitals. Patients admitted to urban hospitals may live longer or function better after their AMI episode because of their higher level of care. There could be other differences in morbidity between urban and rural patients that could not be measured using Medicare data. On the other hand, this analysis indicates that urban hospitals may be able to lower the costs of the care they provide by reducing the number of procedures performed without adversely affecting mortality.

Table 5-14. Transfers and Readmissions for Episodes of Acute Myocardial Infarction, by Hospital Group

Hospital Group	Number of Episodes	Transfers		Readmissions	
		All Hospitals	To Urban Hospitals	All Hospitals	To Urban Hospitals
Urban	22,808	9.7%	9.5%	24.6%	24.0%
Rural	7,486	16.5	14.2	23.7	5.4
Large urban	11,729	10.0	9.8	25.5	25.0
Other urban	11,073	9.5	9.2	23.6	22.8
Rural referral	2,089	14.5	13.2	23.8	19.3
Sole community	1,156	17.9	16.1	25.1	6.9
Other rural	4,241	17.1	14.2	23.2	5.6
Major teaching	2,077	4.1	4.0	27.3	26.1
Other teaching	9,782	7.5	7.3	24.0	22.2
Non-teaching	18,424	14.3	13.5	24.3	17.5

Note: Hospital group is determined by the location of the trigger hospital; that is, the hospital to which the patient was admitted for the acute myocardial infarction.

SOURCE: ProPAC analysis of 1988 Medicare episode of illness data constructed by Abt Associates Inc.

Table 5-15. Median Charges for Episodes of Acute Myocardial Infarction

Hospital Group	Total	Hospital Stay	Outpatient Care	Non-Hospital Physician	Hospital Physician
Urban	$14,250	$11,261	$ 0	$528	$1,458
Rural	9,455	7,491	0	369	826
Large urban	15,517	12,206	0	578	1,554
Other urban	13,067	10,315	0	478	1,362
Rural referral	11,276	8,695	0	408	1,080
Sole community	9,403	7,405	28	366	762
Other rural	8,729	6,957	0	357	738
Major teaching	17,826	14,268	8	573	1,610
Other teaching	14,040	11,183	0	500	1,424
Non-teaching	11,885	9,296	0	465	1,180

Note: Hospital group is determined by the location of the trigger hospital; that is, the hospital to which the patient was admitted for the acute myocardial infarction. Charges are submitted charges. Includes deaths during trigger event.

SOURCE: ProPAC analysis of 1988 Medicare episode of illness data constructed by Abt Associates Inc.

More in-depth analysis of the patterns of care associated with urban and rural AMI admissions must be performed to test these hypotheses.

Patterns of Post-Acute Care Following Hip Fracture

A second patterns of care study examined the types of post-acute care used by Medicare beneficiaries hospitalized due to hip fracture. Three types of post-acute Medicare-covered services were included in the analysis: care in rehabilitation hospitals or distinct-part units, care in skilled nursing facilities, and home care furnished by a home health agency. While these providers all offer post-acute care, there are differences in the type and intensity of services delivered in the various settings. Ideally, differences in treatment setting should be related to patient characteristics that determine the need for post-acute services.

This preliminary analysis examines post-acute service use by patients from 60 days before their hospitalization for hip fracture to 90 days afterwards. It first describes the characteristics associated with use of each of the three facilities, emphasizing whether factors other than those associated with patient need, such as supply of services and payment policies, are correlated with use of each service. If non-patient factors explain use of specific facility types, it is possible that services are not appropriately utilized. Next, factors associated with choosing one type of post-acute facility over another are examined, to determine if the facility types are substitutes for each other. The question is whether patients use a facility on the basis of need or some other factors. To the extent that services provided by the facilities are truly interchangeable, access problems for one service may not adversely affect health if other services are available. However, if the services provided by a particular kind of facility are not substitutable, factors that determine the choice of one facility over another warrant investigation to identify potential access problems.

Use of Post-Acute Care Services—Only 8.2 percent of patients with hip fracture were discharged to a rehabilitation facility for post-acute care, whereas 35 percent of patients used SNF services and 31 percent used home health services (see Table 5-16). Patients could use more than one type of post-acute service. Forty-one percent of patients, however, had no post-acute care.

Age and race were associated with the type of post-acute services used: Hip fracture patients over 85 were significantly more likely to use SNF services and less likely to use rehabilitation facility and home health services. Non-white hip fracture patients were half as likely as white patients to use SNF services and more likely to use home health services.

After controlling for other factors, older beneficiaries were less likely to use rehabilitation facility and home health services and more likely to use SNF services (see Table 5-17). Non-whites were less likely than whites to use SNF care during their hip fracture episode, although there was no difference in

Table 5-16. Use of Post-Acute Care by Hip Fracture Patients

Demographics	Rehabilitation	Skilled Nursing Facility	Home Health Agency	None
Age				
<65	7.9%	13.9%	21.8%	56.4%
65-74	8.6	21.7	27.0	42.7
75-84	8.8	34.4	22.5	34.3
85+	6.9	40.8	14.6	37.6
Sex				
Male	7.9	30.7	20.1	41.3
Female	8.1	35.3	20.2	36.5
Race				
White	8.0	35.1	19.9	37.0
Black	7.8	17.3	28.1	46.7
Other	7.7	21.7	25.9	44.8
Unknown	8.4	31.9	17.1	42.6
Medicare eligible				
Disabled	8.1	13.8	23.1	55.1
Aged	8.0	34.1	20.2	37.1
Medicaid				
Dual-eligible	4.5	34.0	15.6	46.0
Non-Medicaid	8.5	34.3	20.8	36.4

SOURCE: ProPAC analysis of the 1988 Medicare episode of illness data constructed by Abt Associates Inc.

use of home health services. Women used SNF services more than men, whereas men were more likely than women to use home health services.

Beneficiaries who were dually eligible for Medicaid and Medicare were less likely to use rehabilitation facility services when other factors were accounted for; they were also less likely to use home health services. Interestingly, after controlling for age, sex, and race, dual-eligibles were not more likely to use skilled nursing facility services than those beneficiaries who were eligible for Medicare only.

Hip fracture patients with poorer health status, as measured by the number of secondary diagnoses during their hip fracture hospital stays and by prior SNF use, were less likely to use home health services after their hip fracture. They were more likely to use post-hospital SNF services, however. Health status was not associated with use of rehabilitation facility services.

Generally, the supply of post-acute services affected use, even after controlling for health status measures and other patient characteristics. Hip fracture patients hospitalized in counties with more skilled nursing facility beds were likelier to use these services. Patients in areas with more hospital and rehabilitation beds were less likely to use SNFs. Hip fracture patients hospitalized in counties with higher numbers of rehabilitation facility beds were more likely to use rehabilitation facility services. On the other hand, beneficiaries hospitalized in counties with more hospital and SNF beds (after controlling for rehabilitation facility beds) were less likely to use rehabilitation facility services. The number of home health agencies in a county was associated with less use of post-acute home health services.[25]

Various factors related to characteristics of the nursing home market in the state affected whether Medicare beneficiaries used SNF services, possibly because in some states Medicaid patients are more attractive to nursing homes. Beneficiaries hospitalized in states with higher Medicaid nursing home payments were less likely to use Medicare SNF services. Beneficiaries hospitalized in states with more stringent regulatory climates (as exemplified by additional training requirements for nursing home staff and higher staff to patient ratios) were likelier

Table 5-17. Factors Associated with Use of Post-Acute Care Services by Hip Fracture Patients

Factor*	Skilled Nursing Facility	Rehabilitation Facility	Home Health Agency
Age	+	−	−
Sex (female)	+		−
Race (white)	+		
Dual-eligible		−	−
Number of secondary diagnoses noted in hospital	+		−
Length of stay in hospital			+
Prior Medicare skilled nursing facility use in past 60 days	+		−
Prior home health use in past 60 days	+		+
Hospital location in rural area		−	
Number of skilled nursing facility beds in county per 1,000 persons 65 and over	+	−	
Number of hospital beds in county per 1,000 persons 65 and over	−	−	
Number of rehabilitation beds in county per 1,000 persons 65 and over	−	+	
Number of home health agencies per 1,000 persons 65 and over			−
Medicaid nursing home payment level for state	−		
Additional training requirements for nursing home staff	+	−	+
Staffing requirements in nursing homes	+	+	
Average adequacy of Medicare payment to skilled nursing facilities	+		−
Number of persons 65 and over below poverty		+	+
Average January temperature in county	−		+

Note: + means an increase in the factor is associated with a significantly higher likelihood of use of the service; − means an increase in the factor is associated with a significantly lower likelihood of use of the service.

* Prior hospital use in the last 60 days and hospital size were also included in the equation and were not significantly associated with use. The type of Medicaid nursing home payment methods was significantly associated with Medicare skilled nursing facility, rehabilitation, and home health agency use.

SOURCE: ProPAC analysis of data from 1988 Medicare data constructed by Abt Associates Inc.

to use skilled nursing facility services. By contrast, beneficiaries hospitalized in states where Medicare payment was more generous were more likely to use Medicare skilled nursing facility services.[26, 27]

Patients admitted to the hospital in states with additional training requirements for nursing home staff were also more likely to use home health agency services. This could be because additional training requirements for SNF services may be related to increased regulation of home health agencies, making them better able to deliver the heavy care needed by Medicare beneficiaries.

Hip fracture patients in urban hospitals were more likely than those in rural hospitals to use rehabilitation facility services, probably because there are fewer rehabilitation facilities in rural areas. Rural or urban hospital location was not associated with use of SNF or home health post-acute services.

Factors associated with length of stay in the SNF or rehabilitation facility and the number of post-acute home health visits were also examined. Once patients chose to use a specific post-acute service, their characteristics—rather than supply or policy variables—seemed to determine the amount of service used. Patients who stayed longer in the hospital for a hip fracture also stayed longer in rehabilitation facilities, possibly because they were sicker. Patients who received rehabilitation services in a distinct-part rehabilitation unit of an acute care hospital had shorter stays than those cared for in rehabilitation hospitals.

Older patients and sicker patients, as measured by longer lengths of stay in the hospital and prior home health and skilled nursing facility use, also had longer SNF stays and more post-acute home health care visits. However, beneficiaries hospitalized within the 60 days immediately preceding admission for hip fracture had fewer home health agency visits during their episode than those

patients without a prior hospitalization. Prior hospitalizations thus could be a proxy for poor health, and sicker patients may have received SNF or rehabilitation facility care rather than home health care.

Beneficiaries who received care in a hospital-based skilled nursing facility had shorter lengths of stay than those in free-standing nursing facilities. The Medicaid nursing home payment amount and method and the adequacy of Medicare SNF payment were related to the length of the Medicare SNF stay.

Choice of Type of Post-Acute Care for Hip Fracture Patients—The next part of the analysis examined factors associated with the choice of post-acute care. Findings indicate that the availability of these facilities affects whether Medicare beneficiaries use them. However, they do not appear to be substitutes for each other. Rehabilitation facility services are used by a different group of patients. Patients receiving rehabilitation facility services tend to be the young elderly (under 75), male, and hospitalized in urban areas. Patients who use SNFs before being hospitalized for hip fracture are more likely to use them afterwards as well.

Possibly, the post-acute facilities studied here do not appear to be substitutes for each other because the areas with a large supply of one type may also have a large supply of the other types. Therefore, people who live in these areas may have used more of all types of facilities, relative to other areas, and a substitution effect would not be apparent. In addition, states with highly regulated environments may tend to regulate all of the facilities, thus creating the same types of constraints on all types of post-acute care.

Several patient characteristics were associated with use of each post-acute service and with the choice among services. Sicker patients—as measured by length of hip fracture hospital stay, number of secondary diagnoses during hospitalization, prior SNF use, and prior home health use—were more likely to use SNFs and less likely to use home health services.

However, health status was not associated with use of rehabilitation facility services. If rehabilitation facilities provide more intensive care than home health agencies do, this might indicate that factors other than need are determining use. In fact, non-patient characteristics are important predictors of the use of all three types of post-acute care. The supply of rehabilitation facilities is strongly correlated with use of rehabilitation services; the supply of SNFs is correlated with use of these kinds of services. Medicare SNF payment is also correlated with use of SNFs and home health services. The fact that non-patient characteristics influence whether a specific facility is used and choice of post-acute services may signal possible access problems. It may be the case that supply rather than patient need is determining placement of patients in post-acute facilities. An examination of potential patient outcomes will be necessary to further evaluate whether patients are receiving quality post-acute care in the appropriate setting.

QUALITY OF CARE

The Medicare program is responsible for ensuring that beneficiaries receive quality services. It is especially important to monitor any effects financial constraints may have on the quality of care delivered by specific providers. However, quality is difficult to define and measure; there are conflicting opinions about the roles that medical practitioners, insurers, and the consumers of health care should play in ensuring quality. Further, data are often insufficient to make any judgments about the quality of care providers furnish.

This section focuses on two major quality assurance mechanisms the Medicare program uses to control and monitor the care its beneficiaries receive—conditions of participation (COPs) and Peer Review Organizations (PROs). Conditions of participation are specific to a facility type and are designed to ensure that a facility is safely built and adequately administered. To meet COPs, facilities may be required to have numerous procedures in place, ranging from those for fire drills to those that monitor patient functioning levels. If a provider fails to meet Medicare's conditions of participation, it will not be reimbursed by the program. Most COPs address organizational and physical standards and the process of care rather than outcomes of care. For example, many COPs relate to types of staff, hallway size, and documentation that certain procedures are performed in a specified fashion.

PROs review a sample of medical records to identify possible quality problems. If a specific case fails this review, Medicare can deny payment for that

case. In addition, the provider of services, usually a physician, may be subject to various penalties.

For some providers, conditions of participation are very stringent and there is substantial PRO review; for others—particularly newer types of ambulatory care facilities—there are no COPs and no PRO review. Following is a brief discussion of what other organizations are doing with respect to measuring and mandating quality of care for all U.S. citizens, including Medicare beneficiaries.

Quality Assurance in PPS Hospitals

Virtually all short-stay hospitals meet conditions of participation and therefore are eligible for Medicare payment. To determine if a hospital meets COPs, it is surveyed either by the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) or by the Health Care Financing Administration. Hospitals certified by JCAHO are deemed to meet the Medicare conditions of participation. JCAHO surveys each hospital at least every three years and will conduct interim surveys at the discretion of those hospitals failing to meet some standards. Five different levels of accreditation are possible, ranging from accreditation with or without commendation to denial of accreditation altogether. Recommendations for improvement are also provided when warranted. JCAHO cannot directly levy sanctions or fines. Some states make JCAHO accreditation a requirement for state licensure and operation, and each state deals differently with JCAHO's recommendations.

The only recourse for the Medicare program when quality problems are found during an accreditation survey is to deny payment based on noncompliance with the COPs. It has been argued that hospitals have limited incentives to improve beyond what is needed for accreditation. In response to these concerns, in its 1992 accreditation manual, JCAHO changed the emphasis of its quality assurance indicators from structure measures (such as safety standards or personnel requirements) to continuous quality improvement. It has also incorporated a process to monitor hospitals on a quarterly basis rather than every three years. In addition, a new set of standards concerning patients' rights has been developed. Implementation monitoring has been designed to assess a hospital's progress toward compliance with designated standards that require more time than JCAHO usually allots for implementation. Performance indicators will also be collected quarterly. This change addresses the concern that a survey conducted every three years may not provide hospitals with timely enough feedback to target problems for corrective action.

PRO review of hospital cases is used to determine if payment should be made. This determination is based on medical necessity, reasonableness, and appropriateness of placement at an acute level of inpatient care. PROs assess whether services were reasonable or necessary, whether they could have been provided more effectively on an outpatient basis or in a non-PPS facility, and whether the quality of the services meets professionally recognized standards of health care.

PROs identify potential quality of care problems by applying sets of standards referred to as generic quality screens. These screens are specific to the services furnished. Cases that fail the screens are referred to physician reviewers.[28]

PROs originally were charged with reviewing inpatient hospital care. Instructions from HCFA to the PROs that define the set of cases to be reviewed, criteria to use for review, and intervention tasks are contained in a "scope of work." In the third scope of work, issued in 1988, review was expanded to include the intervening care between hospitalizations of fewer than 30 days apart, including review of SNF, home health agency, hospital outpatient department, ambulatory surgical center (ASC), and emergency room care. Care provided in private physicians' offices was excluded from PRO review.

HCFA recently announced its intention to revise its approach to improving quality of care for Medicare beneficiaries by changing the emphasis in the type of review the PROs conduct. The goal of the new program, called the Health Care Quality Improvement Initiative, is to move from dealing with individual clinical errors to helping providers improve the mainstream of care. This initiative will attempt to examine variations in processes of care by geographic areas, providers, and other relevant variables. In addition, it will assess how patterns of care diverge from what is regarded as effective. It will also use data to examine outcomes of care, both to

identify remediable sources of poor outcomes and to help validate assumptions about which processes work best. Two new data systems are being developed to analyze these issues: The Uniform Clinical Data Set (UCDS) will provide detailed clinical information on a 10 percent sample of discharges, and the National Claims History File will include claims for all services paid by Medicare. The two data systems have complementary roles. The UCDS can describe inpatient practices in detail and can be used to scrutinize specific processes of care, while the National Claims History File is a larger dataset including information on all patients and settings, although it lacks clinical depth.

Quality Assurance for Medicare-Covered Services Provided Out of the Hospital

Various factors have contributed to the rise in the number and share of Medicare services provided out of the hospital. Among these are advances in medical technology, inpatient cost constraints, payment incentives, and patient preferences. Medicare COPs and PRO review are applied in some outpatient settings, including hospital outpatient departments and ambulatory surgical centers. However, in other settings—particularly ambulatory care centers and diagnostic imaging centers—the program does not review the quality of care Medicare patients receive (see Table 5-18).

Most health care providers participating in the Medicare program have implemented internal mechanisms to assess the quality of care, although these mechanisms are not standardized. Further, some providers, notably physicians, have not implemented comprehensive internal quality control mechanisms. There is, however, a recent trend toward physician profiling techniques.[29]

Third-party payers like the Medicare and Medicaid programs and private insurers also have mechanisms in place to examine and regulate the quality of care provided to their insured populations. However, these external quality control mechanisms are not standardized across providers. Some providers are scrutinized by a variety of sources and subject to very strict quality regulations that use outcome measures. For example, the Clinical Laboratory Improvement Act of 1988 requires proficiency testing in laboratories participating in the Medicare program. Other facility types (notably ambulatory care centers) escape from such regulations altogether. Sanctions available to the various quality control mechanisms also vary widely. In general, states can deny licenses and close facilities or levy fines; insurers can deny payment and refer to legal entities that can prosecute; and voluntary organizations can only provide educational feedback.

The following discussion summarizes the various mechanisms used to monitor the quality of care for several services offered by PPS-excluded facilities.[30] These facilities include some kinds of post-acute care services, 14 outpatient services, and psychiatric and rehabilitation hospital services.

Post-Acute Care Facilities—Three major programs examine quality of care in nursing homes: the Medicare program, state licensing programs, and JCAHO. To receive payment for services provided to beneficiaries, Medicare SNFs must meet Medicare COPs (now called long-term care requirements for these facilities). Whether these requirements are met is assessed through an annual survey conducted by HCFA or its representatives—often state licensing agencies. Medicare-certified nursing facilities must meet HCFA's requirements as well as those necessary for state licensing. About 10,000 of the roughly 16,000 nursing homes nationwide, or 63 percent, are Medicare-certified (see Table 5-19). Medicare certification is the most common mechanism used to regulate quality of care in skilled nursing facilities; JCAHO accredits only about 6 percent of them.

Regulations enacted as part of OBRA 1987, which are currently being implemented, revised the conditions of participation required by the Medicare program.[31] They are much more detailed and outcomes-oriented than previous COPs. For example, residents must be assessed every three months to determine whether they are receiving services to enable them to achieve their highest potential level of functioning.

Home health agencies are subject to less quality oversight than are skilled nursing facilities. Only about half of home health agencies (47 percent) participate in the Medicare program compared with 63 percent of nursing homes. JCAHO, however,

Table 5-18. Certification and Licensure of Medicare Providers

Provider Type	Subject to Medicare Certification	Medicare-Certified Providers	States with Licensing Requirements
Long-term care providers			
Nursing facilities	x	10,021	50
Home health agencies	x	5,661	38
Outpatient facilities			
Hospital outpatient departments	x	4,950[a]	50
Comprehensive outpatient rehabilitation facilities	x	184	10
Cancer centers			0
Ambulatory surgical centers	x	1,165	41
Ambulatory care centers			10
Diagnostic imaging centers			3
Lithotripsy centers			NA
Cardiac catheterization laboratories			2
Dialysis centers	x	1,987	NA
Independent clinical laboratories	x	4,828	25
PPS-excluded hospitals			
Psychiatric hospitals	x	650[b]	50
Rehabilitation hospitals	x	120[c]	50

Note: NA = not available.

[a] Number of certified hospital outpatient departments has been estimated; the Health Care Financing Administration does not track this provider type.

[b] There are an additional 1,104 PPS-excluded Medicare-certified psychiatric units in PPS hospitals.

[c] There are an additional 628 Medicare-certified, PPS-excluded rehabilitation units in PPS hospitals.

SOURCE: Abt Associates Inc., under contract to ProPAC.

accredits a greater percentage of home health agencies than it does nursing homes (21 percent). The Community Health Accreditation Program, Inc. (CHAP) currently accredits only 3 percent of home health agencies. HCFA has published its intentions to grant both JCAHO and CHAP "deemed status" for home health agency certification, meaning that if either of these organizations accredits an agency, it is automatically certified to receive payment under Medicare. HCFA granted JCAHO deemed status in February 1992. Home health agencies accredited by JCAHO after this date will automatically be granted Medicare certification, and the rate of accreditation/certification of home health agencies by JCAHO is thus likely to increase.

JCAHO surveys take place every three years; Medicare and CHAP surveys occur at least once per year. Only 38 states license their home health agencies, while all states have licensure requirements

Table 5-19. Estimated Number of Long-Term Care Facilities Reviewed/Accredited

Provider Type	Total Number of Facilities	Quality Assurance Mechanism	Approximate Percentage Reviewed
Nursing homes	16,000	Medicare PRO*	63%
		JCAHO	6
Home health agencies	12,000	Medicare PRO*	47
		JCAHO	21
		CHAP	3

Note: CHAP = Community Health Accreditation Program, Inc; JCAHO = Joint Commission on the Accreditation of Healthcare Organizations; PRO = Peer Review Organization.

* Limited to intervening care reviews.

SOURCE: Abt Associates Inc, under contract to ProPAC.

for their nursing facilities. None of the mechanisms that monitor home health agencies uses outcomes measures to assess quality.

Outpatient Settings—The Medicare program certifies most hospital outpatient departments, ambulatory surgical centers, and comprehensive outpatient rehabilitation facilities (CORFs). In addition, voluntary organizations accredit many of these facility types (see Table 5-20). However, some types of facilities, notably ambulatory care centers, are not subject to Medicare conditions of participation, are not accredited by voluntary organizations, and are not usually licensed by states. Only 10 states license ASCs and CORFs, for example, whereas only three license diagnostic imaging centers.

Review processes for outpatient settings also vary widely by the type of quality assurance mechanism used. Recent changes in Medicare conditions of participation for clinical laboratories mandate quite stringent quality control. These include requirements for proficiency testing, whereby a specimen or sample is derived and stabilized by the testing organization and dispensed without identification to the laboratory being tested. The laboratory's results are validated against the tester's results. Free-standing dialysis centers also are closely monitored by HCFA through ESRD networks that oversee many aspects of care for patients with this condition. A new scope of work for the networks is currently being developed by HCFA's Health Services and Quality Bureau that will include more outcomes-oriented measures of care. Outcomes measures of quality are not included in the quality assurance mechanisms used by the other eight facility types (hospital outpatient departments, outpatient rehabilitation facilities, cancer centers, ambulatory surgical centers, ambulatory care centers, diagnostic imaging centers, lithotripsy centers, and cardiac catheterization laboratories).

How often different types of facilities are monitored also varies. JCAHO conducts its accreditation surveys every three years. Medicare conducts its surveys annually, but requires only a one-time safety and licensure inspection of cardiac catheterization laboratories that is conducted by PROs. Virtually all quality assurance organizations monitoring ambulatory facilities announce their inspections in advance.

Psychiatric and Rehabilitation Hospitals—Both psychiatric and rehabilitation hospitals are subject to Medicare conditions of participation: That is, they must meet Medicare standards if they are to receive any payments from the program. In addition, all states license both types of facilities, while more than half are also accredited by voluntary organizations such as JCAHO and the Commission on Accreditation of Rehabilitation Facilities (see Table 5-21).[32] To fulfill Medicare COPs, these hospitals must meet state licensure requirements. JCAHO accreditation satisfies Medicare's COPs, although each state conducts separate surveys to determine compliance with special medical records requirements and staffing for psychiatric hospitals.

JCAHO's standards are somewhat more stringent than those mandated in the basic Medicare conditions of participation; one standard, for example, concerns patients' rights—a subject not addressed in the Medicare conditions of participation. The Commission on Accreditation of Rehabilitation Facilities—and to a lesser extent JCAHO—also includes such outcomes-oriented measures of quality as patients' functional or behavioral goals.

Summary

There is wide variation in the number and type of external quality assurance mechanisms for facilities used by Medicare beneficiaries. Nursing facilities are subject to more stringent quality standards than are other non-hospital providers. Other kinds of facilities, notably ambulatory care centers and cardiac catheterization laboratories, undergo essentially no external quality review. Not all types of facilities are certified by Medicare; several non-hospital facilities studied have no Medicare conditions of participation. Further, states do not require licensure for many types of facilities.

Virtually all types of the facilities studied—even if the state does not license them—must meet state building codes, including those related to fire and safety. However, most requirements relate to the facility's physical structure. Fewer requirements relate to process of care and even fewer to outcomes. In short, not many requirements focus on the appropriateness and timeliness of care and interventions.

Sanctions also vary widely. In many cases, the only ones available are to close a facility or to deny

Table 5-20. Estimated Number of Outpatient Facilities Reviewed/Accredited

Provider Type	Total Number of Facilities	Quality Assurance Mechanism	Approximate Percentage Reviewed/Accredited[a]
Hospital outpatient departments[b]	5,000-6,000	Medicare certification PRO review[c] JCAHO AAAHC	90% 80-90 0[d]
Outpatient rehabilitation facilities[b]	3,200	Medicare certification JCAHO CARF	6 0[d] 6[e]
Cancer centers	1,700 comprehensive cancer centers 1,144 radiation oncology centers	JCAHO American College of Surgeons American College of Radiology	0[d] 70% comprehensive cancer centers[f] 9% radiation oncology[a]
Ambulatory surgical centers[b]	1,200-1,300	Medicare certification PRO review JCAHO AAAHC	90 90[c] 7 11
Ambulatory care centers	5,500	JCAHO AAAHC	0[d] 0[d]
Diagnostic imaging centers	935-1,200 diagnostic imaging centers 10,000 mammography centers	JCAHO American College of Radiology	0[d] 70% diagnostic imaging centers 25% mammography centers[f]
Lithotripsy centers	200-300	JCAHO American Lithotripsy Society	0[d] 50
Cardiac catheterization laboratories	25	PRO review JCAHO	90 28
Dialysis centers[b]	1,734	Medicare certification ESRD networks JCAHO	100[g] 100[g] 0[d]
Independent clinical laboratories	12,000 clinical laboratories[h] 4,828 independent Medicare-certified laboratories	Medicare certification/CLIA College of American Pathologists	100[g] 36[h]

Note: AAAHC = Accreditation Association for Ambulatory Health Care, CARF = Commission on Accreditation of Rehabilitation Facilities, CLIA = Clinical Laboratory Improvement Act, ESRD = end-stage renal disease, JCAHO = Joint Commission on the Accreditation of Healthcare Organizations.

[a] Estimates are based on the number of facilities reviewed by the accrediting organization and the estimated number of facilities nationwide. As a result, the numerator and denominator may not be from the same source.

[b] A facility cannot be paid by Medicare unless it meets Medicare's conditions of participation. Total number of facilities includes non-certified providers.

[c] In addition to intervening care reviews, a facility-specific 3 percent sample of ambulatory surgical cases is reviewed.

[d] Less than 1 percent of all facilities are reviewed by this mechanism.

[e] Includes non-Medicare-certified facilities.

[f] Includes hospital-based centers.

[g] Estimate reflects Medicare-certified facilities only. Therefore, the percentage of facilities subject to Medicare certification is 100 percent.

[h] Includes hospital-based and independent clinical laboratories.

SOURCE: Abt Associates Inc, under contract to ProPAC.

it payment. It is not clear whether these sanctions affect quality in a positive or negative way. If a facility closes, beneficiaries may be harmed more than if quality could somehow be improved. Voluntary organizations like JCAHO, on the other hand, cannot impose direct sanctions other than denying accreditation, which may or may not be significant for the institution. Finding the proper level of

Table 5-21. Estimated Number of Psychiatric and Rehabilitation Hospitals Reviewed/Accredited

Provider Type	Total Number of Facilities	Quality Assurance Mechanism	Approximate Percentage Reviewed
Psychiatric hospitals	1,224	Medicare	58%
		PRO	--
		JCAHO	76
		CARF[a,b]	--
Rehabilitation hospitals	276[c]	Medicare	55
		PRO	--
		JCAHO[d]	66
		CARF[a]	--

Note: CARF = Commission on Accreditation of Rehabilitation Facilities, JACHO = Joint Commission on the Accreditation of Healthcare Organizations, and PRO = Peer Review Organization.

[a] CARF accredits programs that are designed to help the disabled; it does not accredit the hospital per se.

[b] As of July 1, 1992, CARF will begin accrediting psychiatric units of hospitals.

[c] Includes all long-term or other special hospitals, such as rehabilitation facilities.

[d] Includes hospitals and rehabilitation units.

SOURCE: Abt Associates Inc, under contract to ProPAC.

severity of sanctions and the appropriate balance between punitive actions and educational feedback are not easy tasks.

Quality assurance mechanisms in some sites of care, especially nursing facilities, have undergone dramatic improvements in recent years. Among the newer types, however, quality assurance remains fragmented and often cursory. There is thus legitimate concern that Medicare beneficiaries may be receiving health care in settings that are not held accountable for the quality of services they provide.

CONCLUSIONS

The Medicare program pays for acute and post-acute care services for nearly all of the nation's elderly. Advances in technology and changes in practice patterns have moved many of these services outside of the hospital. With the growth in the ranks of older and certain disabled Americans, post-acute and long-term care are consuming an ever larger portion of the total U.S. health care dollar. The pressing need to contain spiraling costs has led to changes in health care financing and supply of services. These trends have significant consequences for Medicare enrollees.

Medicare does not pay the entire bill for the services it covers. Nor does it pay for some other non-acute services (notably long-term care). Even though most Medicare enrollees have supplemental insurance to help reduce out-of-pocket expenses, 21 percent do not and thus may incur substantial liabilities. Beneficiaries are also affected by variations in the comprehensiveness of supplemental coverage. Recent legislation that clarifies and simplifies medigap insurance addresses this by making the policies more uniform.

While the Medicare program continues to cover the acute health care needs of elderly and certain disabled Americans, evidence suggests that access to post-acute services like SNF care may be constrained. Use of SNF services varies widely by geographic area and is affected by factors such as supply, Medicare and Medicaid payment, and the state regulatory environment. The demand for home health services is the fastest-growing component of the Medicare program. Spending for long-term care remains beneficiaries' largest single out-of-pocket expense.

Preliminary studies of patterns of care provided to Medicare beneficiaries with hospitalizations for AMIs and hip fracture raise important questions about beneficiary access to care for specific services. Heart attack patients admitted to rural rather than to urban hospitals receive fewer cardiac procedures, even when these procedures are performed during readmissions within 90 days after the AMI. There is no apparent reason for the variation in service use and no difference in patient mortality during the episode. Similarly, either the

supply of some post-acute services, particularly rehabilitation facility services, is constrained, or other types of post-acute care are being used if no rehabilitation facilities are available. Future research is needed to determine if access to cardiac procedures or post-acute services is inappropriately restricted.

With the shift in site of service out of the hospital, Medicare has a growing responsibility to monitor the quality of care beneficiaries receive in alternative settings. The mechanisms Medicare uses to do this vary widely. For nursing homes and psychiatric hospitals, the program's certification standards are quite specific. For other types of facilities in which enrollees can receive services, such as ambulatory care centers, Medicare has no quality monitoring method in place.

Medicare needs to ensure that care is provided to beneficiaries in the most efficient manner. Despite mounting pressures to control costs, efforts to monitor access, quality, and patterns of care are essential.

Notes to Chapter 5

1. The number of Medicare beneficiaries with ESRD is as of December 31 of each year and includes Medicare patients who are currently entitled to benefits.

2. Enrollees who have both medigap and Medicaid supplemental coverage are included in the Medicaid group, inasmuch as medigap insurers are now prohibited from selling policies to enrollees eligible for Medicaid.

3. Data are unpublished estimates from Lewin-ICF using the 1989 Consumer Expenditure Survey.

4. U.S. Congress, Congressional Budget Office, *Restructuring Health Insurance for Medicare Enrollees* (Washington, DC: August 1991).

5. Ibid.

6. Prospective Payment Assessment Commission, *Medicare and the American Health Care System, Report to Congress,* June 1991 (Washington, DC: ProPAC, 1991).

7. Naomi Karp and Bess M. Brewer, "Medigap Insurance: Consumers Receive Greater Protection But Still Shoulder Burden of Health Costs," *Clearinghouse Review,* October 1991.

8. Mary Jane Fisher, "NAIC Adopts Basics for Medigap Plans," *National Underwriter (Life/Health/Financial Services)* 95(31):1,47, August 5, 1991.

9. U.S. Library of Congress, Congressional Research Service, "Health Benefits for Retirees: an Uncertain Future," *CRS Issue Brief,* Order Code IB88004 (Washington, DC: June 5, 1991).

10. Ibid.

11. American Association of Retired Persons (AARP), Public Policy Institute of AARP, "Health Benefits in Retirement: Current Trends and Their Implications," *Issue Brief* (Washington, DC: AARP, May 1991).

12. Foster Higgins, *Health Care Benefits Survey 1990,* Report 4: Retiree Health Care (Princeton, NJ: A Foster Higgins, 1991).

13. Michael A. Morrisey, Gail A. Jensen, and Stephen E. Henderlite, "Employer-Sponsored Health Insurance for Retired Americans," *Health Affairs* 9(1): 57-73, Spring 1990, and Congressional Budget Office, *Restructuring Health Insurance.*

14. Congressional Research Service, "Health Benefits for Retirees."

15. AARP, "Health Benefits in Retirement."

16. Ibid.

17. Foster Higgins, *Benefits Survey 1990.*

18. Congressional Research Service, "Health Benefits for Retirees."

19. U.S. Congress, Congressional Budget Office, *Employee Benefits: Effect of Bankruptcy on Retiree Health Benefits, Report to the House of Representatives* (Washington DC: August 1991).

20. Congressional Budget Office, *Restructuring Health Insurance.*

21. American Hospital Association, *Hospital Closures 1980 Thru 1991: A Statistical Profile* (Chicago, IL: AHA, February, 1992).

22. U.S. Department of Health and Human Services, Health Care Financing Administration, "Report to Congress: Administratively Necessary Days," HCFA Pub. No. 03307, December 1990.

23. Andrea Steiner, "Post-Hospital Services for Vulnerable Elderly: Issues Related to Equity" (Santa Monica, CA: RAND) forthcoming.

24. Christine Bishop and Lisa Dubay, "Access of Medicare Patients to Post-Hospital SNF Care," The Urban Institute, 1988.

25. ProPAC's measure of home health supply is not a perfect indicator of capacity, since home health agencies vary significantly in their size. Counties with few people but large land area may have several small home health agencies, while counties with large numbers of people and small land area may have one large home health agency. In fact, more home health agencies were found in rural than in urban areas.

26. Medicare reimburses skilled nursing facilities on the basis of costs. subject to a limit. Since the cost limit is set nationally, but nursing home costs vary by state, Medicare reimbursement is more generous in some states than others. For a further discussion of this issue, see Prospective Payment Assessment Commission, *Medicare's Skilled Nursing Facility Payment Reform,* Congressional Report No. C-92-01, March 1992.

27. Medicare SNF payment adequacy is measured as the proportion of facilities in the state that had payment to cost ratios of less than 1.0.

28. Cases determined to have quality problems may be referred to the Office of the Inspector General of the Department of Health and Human Services, which in turn may impose sanctions ranging from a letter of notification to the provider to exclusion from the Medicare program or monetary fines.

29. Profiling is an analytic tool that uses epidemiologic methods to compare practice patterns of providers on the dimensions of cost, service use, or quality of care. See the Physician Payment Review Commission's *Annual Report to Congress 1992,* Chapter 9 for a comprehensive discussion of physician profiling.

30. For a detailed analysis of the different organizations that examine quality of care in non-inpatient facilities, including the actual measures used and how they are assessed, see Abt Associates Inc., *Quality Assurance in Non-PPS Settings,* ProPAC Extramural Technical Report, forthcoming.

31. For a more detailed description of the OBRA 1987 regulations, see Prospective Payment Assessment Commission, *Medicare's Skilled Nursing Facility Payment Reform.*

32. The Medicare conditions of participation are separate from criteria used to qualify for PPS exemption.

Appendixes

Appendix A. Biographical Sketches of Commissioners

Stuart H. Altman, Chairman

Stuart H. Altman is dean of the Florence Heller Graduate School for Social Policy, chairman of the board of the Bigel Institute for Health Policy, and Sol C. Chaikin Professor of National Health Policy at Brandeis University. An economist whose research interests are primarily in the area of Federal health policy, he has been at Brandeis since 1977. Between 1971 and 1976, Dean Altman was deputy assistant secretary for planning and evaluation/health at the Department of Health, Education and Welfare (now the Department of Health and Human Services). From 1973 to 1974, he also served as the deputy director for health of the President's Cost of Living Council, where he was responsible for developing the council's program on health care cost containment. Dean Altman is a member of the Institute of Medicine of the National Academy of Sciences and former member of its governing council, and serves on the board of Beth Israel Hospital (Boston). He is a past president of the Association for Health Services Research and a former board member of The Robert Wood Johnson Clinical Scholars Program. He has testified before the Congress on a wide range of health policy issues and has written an array of articles in the field. Dean Altman received both an M.A. and a Ph.D. in economics from the University of California (Los Angeles).

Richard A. Berman

Richard A. Berman is president, North America, of Howe-Lewis International. Before joining Howe-Lewis, he was a vice president of Korn/Ferry International responsible for the health care practice in the firm's Eastern region. Mr. Berman was previously a practice leader for health care at McKinsey & Company, Inc. In addition, he serves several organizations, including New York City's Mayor's Management Advisory Committee and New York State's Health Care Financing Council. Mr. Berman was the executive vice president of New York University Medical Center from 1983 to 1986 and a professor in health care management at the university's School of Medicine. He was a cabinet official for New York State from 1977 to 1982, first as director of the New York State Office of Health Systems Management and later as the commissioner of the Division of Housing and Community Renewal. Prior to these responsibilities, he held positions with the New York Hospital/Cornell University Medical Center, The Robert Wood Jonhson Foundation, The Commonwealth Fund, and the University of Utah Hospital. He was elected as a member of the Institute of Medicine of the National Academy of Sciences and is a Fellow of the American College of Health Care Executives. Mr. Berman has published many articles in the health care field. Mr. Berman received B.A., M.B.A., and M.H.A. degrees from the University of Michigan.

James D. Bernstein

James D. Bernstein has been director of the North Carolina Office of Rural Health and Resources Development since its inception in 1973. He also serves as president of the nonprofit North Carolina Foundation for Alternative Health Programs, founded in 1983. In addition, Mr. Bernstein since 1970 has been a research associate for the Cecil Sheps Center for Health Services Research at the University of North Carolina at Chapel Hill. Before coming to North Carolina, he administered a 40-bed hospital and eight health centers for the Santa Fe Service Unit of the Indian Health Service. Mr. Bernstein has held a variety of professional positions, including chairman of the Rural Health Care Advisory Panel of the Office of Technology Assessment, vice chairman of the North Carolina Health Insurance Trust Commission, chairman of the rural health steering committee of the National Academy for State Health Policy, and member of the national advisory committee for The Robert Wood Johnson Foundation Hospital-Based Rural Health Care Program. He has been a consultant on projects related to indigent care, practice pattern variations, and cost-effective medical care. Mr. Bernstein received a B.A. from the Johns Hopkins University and an M.H.A. from the University of Michigan.

Clay D. Edmands

Clay D. Edmands is president of Asbury-Salina Regional Medical Center in Salina, Kansas, an acute care rural referral center and an Equal Access Community Hospital. He has been active in the development of Health Frontiers, Inc., a large multihospital organization that has been replaced by Voluntary Hospitals of America. His prior experience includes several years with the Fairview Hospital System in Minneapolis, Minnesota, where he held several positions including that of assistant administrator for development and operations of regional health management and supportive services. Mr. Edmands has participated on the Kansas Hospital Association Board since 1980, serving as chairman, treasurer, and member of the executive committee. In addition to his two terms on the American Hospital Association Regional Policy Advisory Board, Mr Edmands has been president of the Health Systems Agency of Western Kansas Board. Other community involvements include Salina Health Education Board and Voluntary Hospitals of America. Mr. Edmands is currently a faculty preceptor for the University of Minnesota independent study program in hospital administration and the University of Kansas program in health care administration. He holds a B.S. in business administration from the University of Kansas; and an M.H.A. from the University of Minnesota. In addition, he was graduated from the Graduate Naval Supply Corps School and the Naval Officers Candidate School.

Curtis C. Erickson*

Curtis C. Erickson is president emeritus and senior consultant with Great Plains Health Alliance, Inc., of Phillipsburg, Kansas. He served as president and CEO of this organization from 1959 to 1990 and as assistant director from 1955 to 1959. Having served the American Hospital Association (AHA) in many capacities, he became chairman of Regional Advisory Board 6 and was a trustee from 1987 to 1990. He has also chaired AHA's advisory panel to the Center for Small or Rural Hospitals and has been a member of the Council on Management, the Council on Federal Relations, and a representative to the House of Delegates. President of the Lutheran Hospital Association of America from 1974 to 1975, Mr. Erickson was also on the board of trustees from 1972 to 1982. He was president of the Kansas Hospital Association from 1965 to 1966, a member of the board of governors of the Healthcare Stabilization Fund for the Kansas Department of Insurance, and past district governor of Rotary International. From 1983 to 1986, Mr. Erickson served on The Robert Wood Johnson Foundation's National Advisory Committee for the Rural Hospital Program of Extended Care Services. Mr. Erickson is a member of the American College of Healthcare Executives. From 1951 to 1955, he served in the U.S. Air Force. He received a B.S. in business administration from Fort Hays Kansas State University in 1951.

William D. Fullerton

William D. Fullerton is an adjunct professor in the School of Medicine, University of North Carolina at Chapel Hill. From 1978 to 1984, he was principal and president of Health Policy Alternatives, Inc., where he is now a part-time consultant. The first deputy administrator of the Health Care Financing Administration (1977–78), Mr. Fullerton was also a special consultant to the Secretary of the Department of Health, Education and Welfare. He served as chief of the professional health staff, Committee on Ways and Means, U.S. House of Representatives, from 1970 to 1976. Mr. Fullerton was the first executive secretary of the Health Insurance Benefits Advisory Council in 1965–66. Before that, he held various positions in the Social Security Administration. He is a member of the Institute of Medicine of the National Academy of Sciences and a member of the National Academy of Social Insurance. Mr. Fullerton received a B.A. from the University of Rochester.

William S. Hoffman

William S. Hoffman has been director of the Social Security Department of the International Union of the U.A.W. since 1984. Previously, he was the assistant director and a consultant to the department. Mr. Hoffman is also director of the Michigan Health and Social Security Research Institute, Inc., where from 1973 to 1980 he was a senior research associate. An active participant in national and state health care issues, Mr. Hoffman has served on the Michigan Certificate of Need Commission, the Department of Health and Human

Services's Council on Graduate Medical Education, the Department of Labor's Advisory Council on Employee Welfare and Pension Benefit Plans, the Governor's Task Force on Access to Health Care in Michigan, and on the study committees of the Institute of Medicine of the National Academy of Sciences. He is a member of the National Academy of Social Insurance and an adjunct professor of sociology at Wayne State University. Mr. Hoffman has written and spoken extensively on such issues as the use of prepaid mental health care services and organized labor's perspective on current health care issues and legislation. He received a B.A. in psychology from Otterbein College and M.A. and Ph.D. degrees in sociology from Wayne State University.

Clark E. Kerr

Clark E. Kerr is vice president of government relations, Bank of America. He is also president of the California Business Group on Health, where he manages the legislative agenda. In addition, he is acting chairman of the California Health Policy and Data Advisory Commission, and chairman of the Users Group of the National Committee for Quality Assurance. Mr. Kerr serves on the board of directors of the Washington Business Group on Health, and he co-chairs several health committees. Prior Bank of America positions include manager of corporate health programs, manager of benefits planning, manager of corporate training, and positions in marketing and world banking financial services. Mr. Kerr received an M.B.A. in marketing from the University of California at Berkeley.

James R. Kimmey

James R. Kimmey is dean of the School of Public Health and professor of public health at the St. Louis University Medical Center, as well as a professor of community medicine at the St. Louis University School of Medicine. In addition, Dr. Kimmey has taught at the University of Wisconsin, Johns Hopkins University, New York University, and Columbia University. He was administrator of the Division of Health Policy and Planning of the state of Wisconsin and executive director of the American Public Health Association in New York and Washington. Dr. Kimmey served as president of the American Health Planning Association (1980–81) and was a member of the board of directors. Former editor of *Health Planning Memorandum* and managing editor of the *American Journal of Public Health*, he has written extensively on health planning and other health policy topics. Dr. Kimmey received B.S., M.S., and M.D. degrees from the University of Wisconsin and an M.P.H. from the University of California.

David A. Kindig

David A. Kindig is director of Programs in Health Management and professor of preventive medicine at the University of Wisconsin-Madison School of Medicine. He has also served as vice chancellor for health sciences at the university. Among Dr. Kindig's other academic appointments are visiting professor at the Beijing Medical University, School of Public Health. Dr. Kindig was director of Montefiore Hospital and Medical Center (1976–80) and deputy director of the Bureau of Health Manpower, U.S. Department of Health, Education and Welfare (1974–76). He is on the Dissemination Study Section of the Agency for Health Care Policy and Research and the board of directors of the Association of University Programs in Health Administration. He has also served on the state of Wisconsin's Council for Uninsured Health Care Programs and chaired the Wisconsin Governor's Task Force on AIDS. A member of the editorial board of *Medical Care Review*, Dr. Kindig has written extensively on both medical and health policy issues. He received a B.A. from Carleton College and M.D. and Ph.D. degrees from the University of Chicago School of Medicine.

Larry L. Mathis

Larry L. Mathis is president and chief executive officer of The Methodist Hospital System in Houston, Texas, which includes 10 member corporations and The Methodist Hospital. He has held this position since 1983. Before that, Mr. Mathis held a number of positions at The Methodist Hospital. Mr. Mathis is chairman-elect of the board of trustees of the American Hospital Association and serves on its executive committee. He is also governor of the American College of Healthcare Executives. Mr. Mathis is former chairman of both The Greater

Houston Hospital Council and of the Texas Hospital Association. He is a former member of the administrative board of the Association of American Medical Colleges's Council of Teaching Hospitals, and chaired the National Advisory Council on Health Care Technology Assessment from 1985 to 1988. Mr. Mathis was also a consultant to the Ministry of Education and Culture in Brazil and served in the U.S. Army from 1965 to 1970. Mr. Mathis received a B.A. in social sciences from Pittsburgh State University in Kansas and an M.H.A. from Washington University.

Kathryn M. Mershon*

Kathryn M. Mershon is senior vice president, administration at Humana, Inc., a position she has held since 1990. Previously she served as senior vice president, nursing. She holds an adjunct assistant professorship of nursing at Spalding University. From 1971 to 1980, Ms. Mershon was associate executive director, nursing at St. Joseph Infirmary (now Humana Hospital Audubon) in Louisville, Kentucky. Before that, she was a clinical nursing specialist at St. Joseph Infirmary, clinical instructor at St. Francis Xavier Hospital School of Nursing, and a staff nurse. She has a distinguished list of professional and community activities, including board of governors of the Federation of American Health Systems, the National League for Nursing board, and editorial review board of *Nursing & Health Care*. She is a former trustee of Spalding University and a member of the advisory board of the University of Louisville's School of Nursing. Ms. Mershon also served on the Louisville Board of Health and on the board of governors of Louisville General Hospital. She has made numerous public presentations on a variety of nursing-related issues. Ms. Mershon received a B.S. in nursing from Spalding University and an M.S. in nursing from St. Louis University.

Donald R. Oder

Donald R. Oder is senior vice president and chief operating officer of Rush-Presbyterian-St. Luke's Medical Center in Chicago, where he formerly was senior vice president. Before that, he was audit manager with Arthur Andersen & Co. in Chicago. Mr. Oder has held various academic appointments and is currently professor in the Department of Health Systems Management at the Rush University College of Health Sciences. He is a member of and has held leadership positions in several professional associations, including the American College of Healthcare Executives, the American Hospital Association, the Illinois Hospital Association, Voluntary Hospitals of America, the American Institute of Certified Public Accountants, and the Illinois C.P.A. Society. He has served on the board of directors of the Better Business Bureau of Metropolitan Chicago, Inc., and on the occupational health committee of the Chicago Association of Commerce and Industry. Mr. Oder received a B.S. from Wichita State University, a C.P.A. certificate from the University of Illinois, and an M.B.A. from the University of Chicago.

Elliott C. Roberts, Sr.

Elliott C. Roberts, Sr., is chief executive officer of the Medical Center of Louisiana at New Orleans (formerly Charity Hospital at New Orleans), a position he has held since 1984. In this capacity, he assisted in the implementation of the reorganization of the Louisiana State Department of Health and Human Resources, which ultimately became the Louisiana Health Care Authority. Mr. Roberts holds an assistant professorship in the Department of Public Health and Preventive Medicine at Louisiana State University Medical School. He is also a preceptor in the Department of Health Systems Management at Tulane University School of Public Health and Tropical Medicine. From 1980 to 1984, Mr. Roberts was chief executive officer of Cook County Hospital in Chicago. Before that, he was vice president and associate project director for Hyatt Medical Management Services, as well as commissioner of hospitals and executive director of Detroit General Hospital. Mr. Roberts served as executive director at both Harlem Hospital Center (1969–72) and Mercy Douglass Hospital in Philadelphia (1965–69). An active member of the American Hospital Association (AHA), Mr. Roberts served on its board of trustees for five years as well as on the nominating committee, House of Delegates, and in other capacities. He is currently chairman of the Metropolitan Hospital Constituency Section of the AHA. Mr. Roberts has held similar positions of responsibility at the National Association of Public Hospitals and the

Association of American Medical Colleges/Council on Teaching Hospitals. In addition to many other appointments, Mr. Roberts served on the Secretary's Commission on Nursing, Department of Health and Human Services. He received an M.A. in business administration-hospital administration from the George Washington University.

J. Michael Sadaj

J. Michael Sadaj has been medical director of respiratory care services and an active staff member at St. James Community Hospital in Butte, Montana, since 1979. He is currently secretary-treasurer of the medical staff there as well. In addition, Dr. Sadaj practices with the Rocky Mountain Service Corporation, specializing in internal medicine and pulmonary diseases. Dr. Sadaj formerly was medical director of respiratory therapy at Silver Bow General Hospital in Butte. He served on the executive committee and the infection control committee of both hospitals. Dr. Sadaj also chaired the medical section at St. James Community Hospital (1980–83) and at Silver Bow General Hospital (1980–81). From 1974 to 1979, Dr. Sadaj was a resident in internal medicine and a Fellow in pulmonary diseases at the University of Nebraska Medical Center in Omaha. He has been a member of and held leadership positions in several organizations, including the Nebraska Medical Association, American Medical Association, Montana Medical Association, and Montana Professional Assistance Program. In 1984, he was elected to a local government study commission. Dr. Sadaj received B.S. and M.D. degrees from the University of Nebraska Medical Center.

Leonard D. Schaeffer

Leonard D. Schaeffer is chairman of the board and chief executive officer of Blue Cross of California. He came to Blue Cross from his position as president of Group Health, Inc. Mr. Schaeffer was formerly executive vice president and chief operating officer of the Student Loan Marketing Association. He served as administrator of the Health Care Financing Administration, Department of Health and Human Services, and as assistant secretary for management and budget in the Department of Health, Education and Welfare. Before that, Mr. Schaeffer was vice president of Citibank, N.A. He has held various positions with the state of Illinois, including director of the Bureau of Budget, head of the State Planning Office, chairman of the Illinois Capital Development Board, and deputy director for management, Illinois Department of Mental Health and Developmental Disabilities. He was previously vice president of a private investment banking firm and a consultant for Arthur Andersen & Co. A Kellogg Fellow, Mr. Schaeffer is a member of the board of the University of Southern California, School of Public Administration; the Cultural Foundation; Town Hall of California; United Way; and *Managed Healthcare*. Mr. Schaeffer is also an International Fellow at the King's Fund College, London, England. He was graduated from Princeton University.

J. B. Silvers

J. B. Silvers is director of the Health Systems Management Center of Case Western Reserve University. He is also the William M. and Elizabeth C. Treuhaft Professor of Management and professor of banking and finance at the university's Weatherhead School of Management, and professor of epidemiology and biostatistics at the School of Medicine. Before joining Case Western Reserve, Dr. Silvers was a faculty member at the business schools of Indiana, Harvard, and Stanford. At Harvard, he directed the Program for Financial Management and Strategy in Health for five years and served on the faculty of the Program for Health Systems Management for 10 years. Dr. Silvers served the Department of Health and Human Services as a member of the Secretary's Commission on Nursing and as a member of the Health Care Technology Study Section of the National Center for Health Services Research. During 1983–84, he chaired the Governor's Commission on Ohio Health Care Costs. He has written extensively in the fields of corporate financial management, and health care and hospital finance. He also serves as a consultant or adviser to numerous private organizations. Dr. Silvers received a Ph.D. in finance and economics from Stanford University, and M.S. and B.S. degrees from Purdue University in industrial administration and engineering, respectively.

Roxane B. Spitzer-Lehmann

Roxane B. Spitzer-Lehmann is corporate vice president of St. Joseph Health System in Orange, California, which includes eight acute care hospitals, a health maintenance organization, a general and professional liability insurance company, and a home health agency. She holds nursing professorships at Texas Tech University Health Sciences Center; University of Southern California; University of California, Los Angeles ; and California State University, Los Angeles. From 1981 to 1988, Ms. Spitzer-Lehmann was vice president, patient care services at Cedars-Sinai Medical Center. Previously, she held director of nursing positions at several hospitals and was a nurse in both inpatient and public health settings. Her professional activities and achievements include Fellow of the American Academy of Nursing, American Nurses Association task force, Ad Hoc Nurse Executive Committee of the American College of Healthcare Executives, and many other advisory boards. Ms. Spitzer-Lehmann has written and spoken extensively on such issues as management of nonprofit organizations, cost containment, nursing quality and productivity, nursing in the 1990s, and nursing leadership. She received a B.S. in nursing from Adelphi University, an M.A. in nursing service administration from Columbia University, and both an M.A. in management and an M.B.A. from Claremont Graduate School. She is currently a Ph.D. candidate at the Peter Drucker Management Center Claremont Graduate School.

Bruce C. Vladeck

Bruce C. Vladeck is president of the United Hospital Fund of New York. Immediately before joining that organization, Dr. Vladeck was assistant vice president of The Robert Wood Johnson Foundation. From 1979 to 1982, he was assistant commissioner for health planning and resources development of the New Jersey State Department of Health. In that position, he was director of the State Health Planning and Development Agency, where he oversaw the implementation of New Jersey's all-payer, DRG-based hospital prospective payment system. Dr. Vladeck taught for four and one-half years at Columbia University, and has served on the adjunct faculty of Rutgers, Princeton, the College of Medicine and Dentistry of New Jersey, and New York University. He is the author of *Unloving Care: The Nursing Home Tragedy,* and has written numerous articles and book chapters on health policy, health care finance, and health politics. He is a member of the board of directors of the New York City Health and Hospitals Corporation, the executive committee of the New York Blood Center, the advisory committee to the Wagner School of Public Service of New York University, the visiting committee of the School of Management and Urban Policy of the New York School for Social Research, and the Institute of Medicine of the National Academy of Sciences. He received a bachelor's degree in government from Harvard College and M.A. and Ph.D. degrees in political science from the University of Michigan.

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*Term expired 1992

Appendix B: Glossary

The following acronyms and terms are frequently referenced in discussions concerning health care policy. Many definitions of terms are from various Health Care Financing Administration publications and other sources, including the American Hospital Association, the Congressional Budget Office, the Congressional Research Service, the Institute of Medicine, and the Office of Management and Budget, as well as the September 1, 1983, *Federal Register,* Volume 48, Number 171. Where necessary, ProPAC has developed definitions consistent with its use of the terms in Commission documents.

ACRONYMS

AARP	American Association of Retired Persons
AFDC	Aid to Families with Dependent Children
AHA	American Hospital Association
AHCPR	Agency for Health Care Policy and Research
AIDS	Acquired Immune Deficiency Syndrome
AMI	Acute Myocardial Infarction
ASC	Ambulatory Surgical Center
ASPE	Assistant Secretary for Planning and Evaluation, Department of Health and Human Services
AWI	Area Wage Index
BDMS	Bureau of Data Management and Strategy, Health Care Financing Administration
CABG	Coronary Artery Bypass Graft
CARF	Commission on Accreditation of Rehabilitation Facilities
CBO	Congressional Budget Office
CES	Consumer Expenditure Survey
CHAMPUS	Civilian Health and Medical Programs of the Uniformed Services
CHAP	Community Health Accreditation Program
CLIA	Clinical Laboratory Improvement Act
CMI	Case-Mix Index
COBRA	Consolidated Omnibus Budget Reconciliation Act of 1985
CON	Certificate of Need
COP	Conditions of Participation
CORF	Comprehensive Outpatient Rehabilitation Facility
CPI	Consumer Price Index
CRS	Congressional Research Service
CT	Computerized Axial Tomography
DAF	Discretionary Adjustment Factor
DRG	Diagnosis-Related Group
DSH	Disproportionate Share Hospital
EACH	Essential Access Community Hospital
EBRI	Employee Benefits Research Institute
ERISA	Employee Retirement Income Security Act
ESRD	End-Stage Renal Disease
FASB	Financial Accounting Standards Board
FR	Federal Register
FTE	Full-Time Equivalent
FY	Fiscal Year
GAO	General Accounting Office
GNP	Gross National Product
HCFA	Health Care Financing Administration
HHA	Home Health Agency
HHS	Department of Health and Human Services
HI	Hospital Insurance program (or Medicare Part A)
HIAA	Health Insurance Association of America
HMO	Health Maintenance Organization
HSQB	Health Standards and Quality Bureau, Health Care Financing Administration
ICD-9-CM	International Classification of Diseases, Ninth Revision, Clinical Modification
ICF	Intermediate Care Facility
ICU	Intensive Care Unit
IME	Indirect Medical Education
IOM	Institute of Medicine
IPA	Independent Practice Association
IRS	Internal Revenue Service
JCAHO	Joint Commission on the Accreditation of Healthcare Organizations
LTC	Long-Term Care
NAIC	National Association of Insurance Commissioners
MCCA	Medicare Catastrophic Coverage Act of 1988
MCR	Medicare Cost Report
MedPAR	Medicare Patient Analysis and Review File
MRI	Magnetic Resonance Imaging
MSA	Metropolitan Statistical Area
NCHSR	National Center for Health Services Research
NCI	National Cancer Institute
NMES	National Medical Expenditure Survey
OBRA	Omnibus Budget Reconciliation Act
OMB	Office of Management and Budget
OPD	Outpatient Department
OTA	Office of Technology Assessment
PHS	Public Health Service
PPO	Preferred Provider Organization
PRHB	Post-Retirement Health Benefit
ProPAC	Prospective Payment Assessment Commission
PPS	Prospective Payment System
PRO	Peer Review Organization
PTCA	Percutaneous Transluminal Coronary Angioplasty
RPCH	Rural Primary Care Hospital
SCH	Sole Community Hospital
SMI	Supplemental Medical Insurance program (or Medicare Part B)
SNF	Skilled Nursing Facility
TEFRA	Tax Equity and Fiscal Responsibility Act of 1982
UCDS	Uniform Clinical Data Set
VA	Veterans Affairs, Department of

TERMS

Adjusted Admissions—An aggregate hospital output measure reflecting the number of inpatient admissions and outpatient visits, expressed in units equivalent to an inpatient admission. The number of outpatient visits equivalent to an admission is based on the ratio of outpatient to inpatient charges for each hospital. (AHA and ProPAC)

Balance Billing—Physician charges for unassigned claims in excess of Medicare allowed amounts, for which Medicare patients are responsible, subject to a limit. (ProPAC)

Basic DRG Payment Rate—The payment rate a hospital will receive for a Medicare patient in a particular diagnosis-related group. The payment rate reflects the level of wage rates in the hospital's area and the relative costliness of the diagnosis-related group. (ProPAC)

Beneficiary—A person covered by insurance who receives services paid for by the insurer. (ProPAC)

Beneficiary Liability—The amount beneficiaries must pay for Medicare-covered services. Liabilities include premiums, co-payments, deductibles, and balance billing amounts. (ProPAC)

Bundling—Combining separately billable services into a single payment for a set of services. (ProPAC)

Capital—Capital represents the value of an organization's assets at any given time. Medicare's definition of capital costs includes depreciation, interest, leases and rentals, and taxes and insurance on tangible assets, such as physical plant and equipment. (ProPAC)

Carrier—An organization, typically an insurance company, that has a contract with the Health Care Financing Administration to administer claims processing and make Medicare payments to providers of services for most Medicare Part B benefits. (HCFA)

Case Mix—The mix of patients treated within a particular institutional setting, such as the hospital. Patient classification systems, such as the diagnosis-related group (DRG) system, can be used to measure hospital case mix. As a result, patient classification systems can also be known as case-mix systems. (ProPAC)

Case-Mix Index (CMI)—A measure of the average relative costliness of cases treated by a hospital compared to the national average cost of all Medicare hospital cases. The CMI is based on the distribution of cases across diagnosis-related groups and the relative costliness of cases in each diagnosis-related group. (HCFA)

Charges—The prices of services provided by a hospital (for example, surgeries, emergency room visits, days of nursing care, or radiology services). Charges are equivalent to gross revenue. Hospitals must apply the same schedule of charges to all patients, regardless of the expected sources or amount of payment. (ProPAC)

Cost Shifting—Using the hospital charge structure to obtain more revenue from one group of patients than another group relative to the respective costs of their care. Hospitals may use cost shifting to make up losses from uncompensated care, to cover average costs that are higher than the payments of some payers, or to increase hospital margins. (ProPAC)

Diagnosis-Related Groups (DRGs)—A system for determining case mix. Originally developed by researchers at Yale University, the DRG system classifies patients into groups based on the principal diagnosis, the presence and type of surgical procedure, patient age, presence or absence of significant comorbidities or complications, and other relevant criteria. The DRG classification system attempts to categorize patients into groups that are clinically coherent and homogeneous with respect to resource use. PPS currently uses 485 mutually exclusive DRGs. (See also Case Mix.) (ProPAC)

Discretionary Adjustment Factor (DAF)—The numeric representation of the Commission's judgment regarding the rate at which the Medicare standardized amounts should increase or decrease beyond inflation and real changes in case mix. The Commission's fiscal year 1993 DAF recommendation for PPS hospitals includes two components: a positive adjustment for costs of scientific and technological advancement, and a negative adjustment for anticipated increases in hospital productivity. (ProPAC)

Disproportionate Share Hospital (DSH) Adjustment—Payment adjustment under PPS for hospitals that serve a relatively large volume of low-income patients. (CBO)

Enrollee—A person who is covered by insurance. (See also Beneficiary.) (ProPAC)

Excluded Hospitals and Units—Hospitals and units of hospitals that are specifically excluded from Medicare's prospective payment system. These include children's, cancer, long-term, rehabilitation, and psychiatric hospitals. Rehabilitation or psychiatric "distinct part" subunits of acute care hospitals are exempt if they meet certain criteria specified by the Secretary of Health and Human Services. Hospitals located in U.S. territories, Federal hospitals, and Christian Science Sanatoria are also excluded. Excluded hospitals remain under cost-based reimbursement, subject to TEFRA target rate of increase limits. (See also Tax Equity and Fiscal Responsibility Act of 1982.) (48 FR 39755)

Financial Accounting Standards Board (FASB)—An independent organization responsible for establishing generally accepted accounting principles. (ProPAC)

Fiscal Intermediary—An entity, usually an insurance company, that has a contract with the Health Care Financing Administration to determine and make Medicare payments for Part A and certain Part B benefits to hospitals and other providers of services and to perform other related functions. (See also Part A and Part B.) (HCFA)

Fiscal Year—A twelve-month period for which an organization plans the use of its funds. It typically refers to the Federal government's fiscal year (October 1 to September 30). Fiscal years are referred to by the calendar year in which they end; for example, the Federal fiscal year 1992 began October 1, 1991, and ends September 30, 1992. Individual providers can designate their own fiscal years, and this is reflected in differences in the time periods covered by the Medicare Cost Reports. (ProPAC)

Hospital Market Basket Index—An index of the national average annual change in the prices of goods and services hospitals purchase to provide each unit of service. Also referred to as an input price index. (HCFA)

Indirect Medical Education (IME) Adjustment—A payment adjustment applied to total DRG payments under PPS for hospitals that operate an approved graduate medical education program. This adjustment is based on the hospital's ratio of the number of interns and residents to the number of beds. (HCFA)

Input—The labor, capital, and other resources used to produce goods and services. (ProPAC)

Intensity of Services—The number and complexity of patient care resources, or intermediate outputs, used in producing a patient care service. For hospitals, the services include admissions and outpatient visits. Examples of intermediate outputs going into a discharge or outpatient visit include units of nursing care, radiological procedures, and laboratory tests. (ProPAC)

Intermediate Care Facility (ICF)—An institution furnishing health-related care and services to individuals who do not require the degree of care provided by hospitals or skilled nursing facilities as defined under Title XIX (Medicaid) of the Social Security Act. (IOM)

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM)—A diagnosis and procedure classification system designed to facilitate collection of uniform and comparable health information. The disease classification is revised periodically. The ICD-9-CM is the ninth version and was issued in 1979. This system is the basis for grouping patients into diagnosis-related groups. (HCFA)

Large Urban Area—A metropolitan statistical area with a population of more than 1 million or a New England County Metropolitan Area with a population of more than 970,000. (See also Other Urban Area and Metropolitan Statistical Area.) (ProPAC)

Long-Term Care—A variety of ongoing health and social services provided for individuals who need assistance on a continuing basis because of physical or mental disability. Services can be provided in an institution, the home, or the community, and include informal services provided by family or friends as well as formal services provided by professionals or agencies. (IOM)

Loss Ratio—The proportion of insurance premiums paid out in benefits. (ProPAC)

Major Teaching Hospitals—Hospitals with an approved graduate medical education program and whose ratio of the number of interns and residents to the number of beds is .25 or greater. (See also Other Teaching Hospitals.) (HCFA)

Medicare Cost Report (MCR)—An annual report required of all institutions participating in the Medicare program that records the costs incurred by the institution for providing services to all patients, the charges ascribed to all patients, and the Medicare payments received. Costs are defined and reported according to rules established by the Medicare program. (ProPAC)

Medicare Inpatient Margin—A measure that compares PPS payments for Medicare inpatient services with inpatient operating costs. This measure also includes Medicare payments for allowable costs currently excluded from PPS, such as capital and direct medical education. (See also PPS Margin and Total Margin.) (ProPAC)

Medicare Provider Analysis and Review (MedPAR) File—A HCFA data file that contains charge data and clinical characteristics, such as diagnoses and procedures, for every hospital inpatient bill submitted to Medicare for payment. (ProPAC)

Medigap—A privately purchased insurance policy that supplements Medicare coverage and meets specified requirements. (ProPAC)

Metropolitan Statistical Area (MSA)—A geographic area that must include at least: (a) one city with 50,000 or more inhabitants, or (b) a Census Bureau-defined urbanized area of at least 50,000 inhabitants and a total MSA population of at least 100,000 (75,000 in New England). (OMB)

Other Teaching Hospitals—Those hospitals with an approved graduate medical education program and whose ratio of interns and residents to beds is less than .25. (See also Major Teaching Hospitals.) (ProPAC)

Other Urban Area—A metropolitan statistical area with a population of 1 million or less or a New England County Metropolitan Area with a population of 970,000 or less. (See also Large Urban Area and Metropolitan Statistical Area.) (ProPAC)

Outliers—Under the Medicare program, cases with an extremely long length of stay (day outliers) or extraordinarily high costs (cost outliers) when compared with other cases classified in the same diagnosis-related group. Hospitals receive additional payment for these cases under PPS. (ProPAC)

Part A—The Medicare Hospital Insurance (HI) program (Part A of Title XVIII of the Social Security Act) that covers beneficiaries for inpatient hospital, home health, hospice, and limited skilled nursing facility services. Beneficiaries are responsible for deductibles and copayments. (See also Fiscal Intermediary and Part B.) (ProPAC)

Part B—The Medicare Supplementary Medical Insurance (SMI) program (Part B of Title XVIII of the Social Security Act) that covers Medicare beneficiaries for physician services, medical supplies, and other outpatient treatment. Beneficiaries are responsible for monthly premiums, copayments, deductibles, and balance billing. (See also Carrier and Part A.) (ProPAC)

Patient Classification System—A set of patient categories, and the criteria for assigning cases to those categories, which allows cases to be classified into distinct groups. Under PPS, patients are classified into categories for payment using the diagnosis-related groups patient classification system. (ProPAC)

Peer Review Organization (PRO)—Organizations that perform medical peer review of Medicare claims, including review of validity of hospital diagnosis and procedural information; completeness, accuracy, and quality of care; appropriateness of admission and discharge; and appropriateness of PPS outlier cases. (ProPAC)

Post-Retirement Health Benefits (PRHBs)—Health benefits provided to retirees and, typically, to their dependents through an employer's group health plan. PRHBs are an earned benefit and are not taxed. (ProPAC)

PPS Margin—A measure that compares PPS payments to Medicare-allowable inpatient operating costs. This excludes Medicare payments and allowable

hospital costs excluded from PPS, such as capital and direct medical education. (See also Medicare Inpatient Margin and Total Margin.) (ProPAC)

PPS Update Factor—The annual increase to the PPS standardized amounts. The percentage change is applied to the previous year's base payment rate. The update factor is intended to reflect changes in the prices of goods and services purchased by hospitals, as well as changes in hospital productivity, technological advances, quality of care, and long-term cost-effectiveness of services. (See also Hospital Market Basket Index.) (ProPAC)

PPS Year—A hospital's fiscal year under the prospective payment system. PPS 1 refers to the hospital's fiscal year beginning during the Federal fiscal year 1984. For a hospital with a fiscal year beginning January 1, PPS 1 covers the period from January 1, 1984, to December 31, 1984, for example. (See also Fiscal Year.) (ProPAC)

Productivity—The ratio of outputs (goods and services produced) to inputs (goods and services used in production). Increased productivity implies that the hospital or health care organization is either producing more output with the same resources, or the same output with fewer resources. (ProPAC)

Prospective Payment—A method of paying for health care services in which full amounts or rates of payment are established in advance, and providers are paid these amounts or rates regardless of the costs they actually incur. (ProPAC)

Skilled Nursing Facility (SNF)—An institution that has a transfer agreement with one or more participating hospitals, and that is primarily engaged in providing inpatient skilled nursing care and rehabilitative services, and that meets specific regulatory certification requirements. (IOM)

Standardized Amount—An amount that is intended to represent the cost of inpatient treatment for a typical Medicare patient in a reasonably efficient hospital, adjusted for geographic area and hospital characteristics. Standardized amounts are based on Medicare costs reported by hospitals for cost reporting periods ending during 1982, updated to the year of payment by an annual update factor for each year. (See also Update Factor.) (CRS)

Supplemental Insurance—Refers to any private health insurance plan held by a Medicare beneficiary, including medigap policies and post-retirement health benefits. (ProPAC)

Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA)—Legislation that established target rate of increase limits on reimbursements for inpatient operating costs per discharge under Medicare. A hospital's target amount is derived from costs in a base year updated by the annual allowable rate of increase to the current year. For a hospital excluded from PPS, Medicare payments for operating costs may not exceed its target amount. TEFRA preceded PPS as a payment system for hospitals, as most current PPS hospitals were paid under TEFRA rules in 1983. (ProPAC)

Total Margin—A measure that compares total hospital revenue and expenses for all inpatient, outpatient and non-patient care activities. (See Medicare Inpatient Margin, PPS Margin.) (ProPAC)

Unbundling—The separate billing of services that were previously included in the same bill. (ProPAC)

Uncompensated Care—Hospital care provided without payment from the patient or a government-sponsored or private insurance program. It includes both charity care, which is provided without the expectation of payment, and bad debts, for which the hospital has made an unsuccessful effort to collect payment due from the patient. (ProPAC)

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